THE WORLD'S GREATEST PC MAGAZINE

PCFormat

9.4GB DVD INSIDE

65 games demos, 150 full apps, 1 TV show! Turn to p98

£1500 challenge

We dare 10 leading companies to build us a performance PC on a budget **p124**

BUILD YOUR OWN LAPTOP
Complete guide! Nine easy steps to create and customise a portable PC

DARK MESSIAH MIGHT & MAGIC
First hands-on with the Half-Life 2 powered RPG

+How to...
Upgrade your motherboard
Compose your own tunes
Repair corrupt email files
Full software & guides inside

THE NEW
LAWS OF PHYSX

WORLD EXCLUSIVE! The card that's redefining the rules of game design. Reviewed on **p52**

PLUS! ›› WATER-COOLED GRAPHICS ›› EXCLUSIVE GHOST RECON: AW REVIEW

PCFormat

in your mag

THE WORLD'S GREATEST PC MAGAZINE

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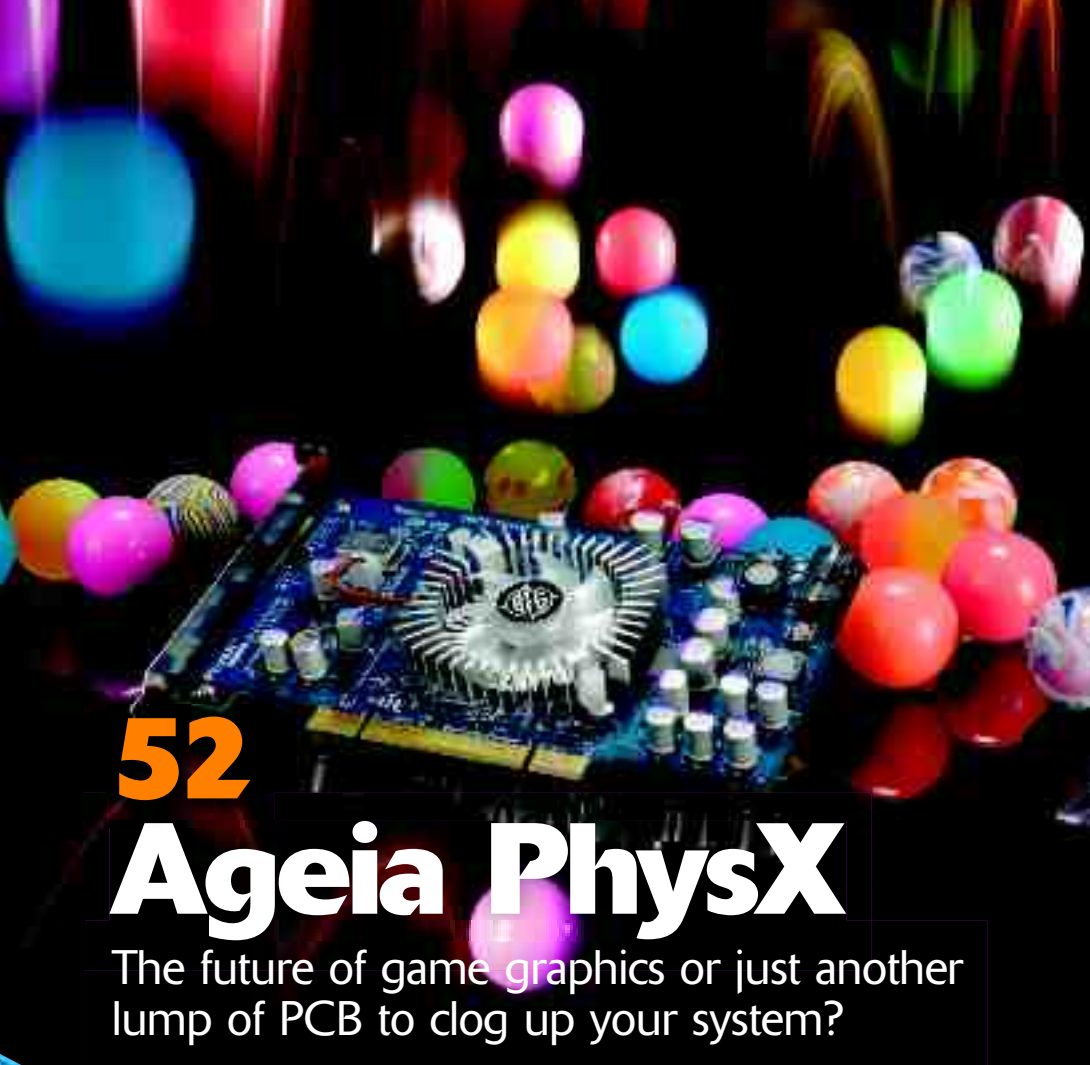
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PCFormat
Welcome

You'll notice a couple of changes to PCFormat this month – specifically regarding our regular 9.4GB DVD. The first, and most obvious, difference is that we've brought it inside the pages of the magazine for the first time. We feel that it gives the whole magazine a cleaner, yet more integrated look and feel, freeing the cover up to look a bit more special. For long term storage of the disc, just remove the card wallet by tearing carefully along the perforations, and you've got a handy file-able package.

The second change, fewer people will notice. As of this month we won't be producing a CD issue, and the reason not many people will notice it is because not many still buy it. With games demos and mods regularly coming in at file sizes too large to fit on a 700MB disc, we feel there's no way we can deliver the best content on a CD.

So here's to the new, double-sided-DVD-only PCFormat. Just the first of many changes we'll be rolling out over the next few months. We're celebrating with a world exclusive review of PhysX cards (see p52) and the launch of our new magazine blog (blog.pcformat.co.uk).

Enjoy the issue,

Adam Oxford, Editor

Alec Meer, Deputy Editor

Coming soon to a magazine near you, the MP3 Transformer. Alec and James have been working on this ambitious project for several months now (it's rather hard to use a Dremel on easily burnt plastic in an office with smoke alarms at two-foot intervals), but hopefully next month the results of butchering a £50 robot toy and a Creative MP3 player will finally see the light of day...
Achievement of the month Finally passing his driving test, despite the girl in the car behind cruelly flashing her chest at him.

Al Bickham, Technical Editor

Spare a thought for mopey Al, who's completion of *Oblivion* has left him in a gameless void. Not even the daily airborne spine-fest of *Quake IV* has managed to lift him from the doldrums; he's even gone back to mumbling 'games are rubbish'. If he carries on like this, we'll have to take him outside and shoot him, on principle.
Achievement of the month Looked after James in his convalescence. Aww, bless!

James Carey, Games Editor

This month, our intrepid Games Editor has been organising his E3 life to the extent that he now has only 3 minutes and 14 seconds precisely over the expo week in which to make his toilet. Yet he did manage to clear a good five hours in his packed day to talk to *Ghost Recon: Advanced Warfighter* developer Grin. Hmm…
Achievement of the month Generously giving blood. OK, OK, having a blood test... it's nearly the same.

Jeremy Laird, Technology Writer

Regular sojourns to the canapé-fuelled glitz of Europe's finest ski resorts are usually enough to make Jeremy feel superior to most other mortals. This month, though, he has another reason to crow haughtily at his fellow man, as our tech guru was the world's first reviewer to down with Ageia's PhysX card. Find out what we made of what some are already calling The Future of Games in our review on p52, and tell the kids that there'll be no holiday this year – Daddy needs to make his PC better.
Achievement of the month Remaining calm in the face of ever-shifting, world exclusive feature-related deadlines.

Front**end**

THE BEST OF THE MONTH IN COMPUTING

Eye Candy
Boxing clever

What did the Romans ever do for us? For one, they inspired the mighty Coolermaster Praetorian chassis which houses this thumping games brusier from Watford Electronics. And what a Corinthian column of imperial power it is… **watfordelectronics. co.uk**

Under the hood
Athlon 64 FX60
2 x 512MB pc3200 Elixir RAM
Asus A8R32-MVP
Deluxe SLI 16x
Powercolor 1900XTX
2 x 200GB Diamondmax 10 HDDs in striped RAID
Coolermaster Praetorian case
7-in-1 floppy drive/card reader
Sony CD/DVD/RW +/- RAM drive
16x Sony DVD drive

Musical taste
Explore that rich, uncovered talent for producing cheesy Eighties rock music with a trial version of the excellent *MAGIX Music Maker 11*, found on your new in-mag DVD, which we've tentatively (though not with any degree of conviction) dubbed the 'undercoverdisc'. In line with our legendarily generous nature, we also provide a step by step tutorial (p106) to guide you in your unending quest for 'the new sound'.

Physical contact
After a late night car park rendezvous, and a transfer to an offshore bank account, we finally have the long awaited review of Ageia's new PhysX card, so rush on over to p56 to find out exactly what we make of this exciting new technology.

Mood music

Our jacket pockets are becoming too crammed with teeny technology. With phones on the market that boast built in MP3 players, is it finally time to jettison our iPods? We give you the verdict on five such mobiles on p62.

Public interest

We offered a golden ticket-esque opportunity this month by wheeling open the wrought iron gates to *PCF* Towers and letting a group of 10 wide-eyed mortals inside to test 10 hyper-fast gaming rigs (p124). The horrors they saw will live with them forever – the blood, the carnage, Alec winning at *Quake*. Luckily we got them to write down some comments before the uncontrollable shakes took over.

Broadband evolves

The biggest high-speed internet shake-up in years is about to hit the UK – how will you download yours?

Just **about to sign** on the dotted line for that tasty 8Mb ADSL connection? You might want to think again – there's a slew of new, and more importantly potentially cheaper, ways to grab entire series of *Quantum Leap* from the internet on their way. An internet revolution? Maybe, just maybe...

First batter up from this team of broadband hopefuls is Pipex. Looking somewhat flushed from a recent tryst with Intel, the service provider has, to coos all around, spawned the UK's first WiMax service. WiMax is, of course, a long range, secure and stable variety of wireless networking tech designed to dish out broadband connections to those unable or unwilling to receive ADSL – its own highly unpersonal IEEE name is in 802.16, and it comes in a range of flavours depending on whether you want a fixed or mobile connection.

PIPE DREAMS

The service, Pipex Wireless, is so hot off the presses that there's very little in the way of actual detail on it for the time being. We know Intel has ploughed £14m into it, we know initial deployment is happening next year in Manchester and parts of London, we know eight major cities in the UK will be covered by the time 2008 arrives. What we don't know is price, speed, the hardware involved and nationwide coverage dates. "We have plans, but nothing is announced yet," explained Graham Currier, Business Development Director at PIPEX Wireless. "Certainly there's national spectrum potential – we'll start in 2007 and will try

> **"WiMAX trials will start in Manchester and London"**

Alec Meer
IS A POOR PERFORMER

I need a new graphics card already…

As the various frothy wibblings over the last couple of issues have no doubt inferred, almost everyone in the PCF office is obsessed with Oblivion. The trouble is, it's a poor performer even on the office's meatiest rig – granted, it's a very beautiful game (the character models aside), but it really shouldn't be grinding £1,500 PCs to a halt as it does.

In my home rig, I'm running a GeForce 7800GT – hardly crème de la crème but still, it's a fairly recent card that should be able to cope with current-gen games. For Oblivion, however, I've had to borrow a 1,280x1,024 monitor from the office, as the GT can't fuel my usual 1,600x1,200 model. And even then, I have to turn HDR off and the view distance almost all the way down. This shouldn't be happening – it's fine on HL2: Lost Coast, or Far Cry 64-bit, with all bells and whistles on. My 3D card's barely out the starting grid and already I need a new one; I'm all for the pace of technology, but PC gamers aren't made of money. With the obvious exception of those nutters who bought the flame-licked £6k Dell Renegade – see p18.

▶ and roll out as quickly as we can." On speed, he was slightly more illuminating: "Well, you tend to get 2Mb as a basic service these days. WiMax is very flexible – whereas with a wired connection you can pump a lot down it but it's fixed. The UK DSL market is slightly confusing – you can get an 8Mb connection that means you get only 512Kb on Sundays. You need to be able to offer a reasonable service most of the time." So, reading between the lines, WiMax will initially offer slower but more reliable broadband, hopefully free from the 6pm slowdown many of us suffer when our neighbours get home and start looking for £2 cheaper iPods on eBay..

So, will WiMax have killed ADSL and cable by the decade's end? "No, it'll absolutely coexist. There are certain things that wired

Intel demonstrated WiMax at its most recent Developer Conference. Behold, the WiMax electric scooter! The chap next to it is Intel's Mobility Group General Manager, Sean Maloney.

connections can do very well, and there's simply not enough spectrum in the universe to replace 26m wired connections", thinks Currier. "The foremost trend in the past has been if things can be done wirelessly, customers like it that way, but I do not see WiMax as the main backbone of the

Navini Networks (www.navini.com) will be one of the first firms to offer pre-WiMax kit.

United Kingdom's future internet connections."

ACROSS THE POND

The same may not be true of America, a currently rather excitable nation due to being the green light for Google's free Wi-Fi (not WiMax – yet) scheme in San Francisco, in collaboration with ISP Earth-Link. Free? Yes, free! But, in the traditional Google

you're a business user I'm not so sure you want Google crawling all over your network," said Pipex's Graham Currier when we inquired as to whether he thought free services may become the norm. "Free just means it's paid for in a different way – there's still a consequence." A problem that may carry more weight is interference – if Googlenet is spreading its

"Carphone Warehouse's move could be a catalyst for cheaper web access"

manner, ad-supported. However, it will span the entire 49 square miles of the USA's most liberal city, already the foremost Wi-Fi hotspot, er, hotspot of the entire country. The 300kilobit per second service will be available for free, or alternatively $20 a month nets lucky Frisco-residents a whopping one gigabit connection. There's some concern over the free service, however – it'll subject its users to ads based on websites they've visited and whereabouts in the city they are, hence lobbying that it's an incursion upon privacy. "If

invisible fingers all over the city, existing wireless networks and other radio equipment may suffer for it.

Making more headlines over here is Carphone Warehouse's announcement that it's to offer 'free' wired broadband to folk who sign up for its landline phone service – which comes to £21 a month, including up to 8Mb/s ADSL, plus free local, national and even international calls. It's widely believed that this may become the catalyst for a huge shake-up of ISP prices countrywide – more news on the repercussions next month. **PCF**

THEY SAY
"The British public has been overcharged for net access, or has had to use slow web connections." Carphone Warehouse CEO Charles Dunstone declares war.

Only when I LARP

Gaming helps kids cope with disease

We all know that games are good for you. They make you big and strong, give you curly teeth and straight hair. Periodically some research group or other releases the shock finding that games actually improve people's problem-solving and hand-eye coordination skills, but it's rare to see a game specifically designed to help people fight disease. Even if that fight is a mental one.

Remission is a game by Hope Labs, designed to help children battling cancer. It's a shooter where kids play an anthropomorphic nanobot called Roxxi cruising around in the bodies of patients, zapping their cancer cells. It aims to give the patients renewed hope that the fight going on inside their bodies is one they can win.

It's good to see games being used as therapy. We were delighted here at *PCFormat* when we were contacted by a doctor at Great Ormond Street Hospital this month. Having seen our coverage of Naturalpoint's TrackIR 4 back in *PCF185*, Dr Pickett is now using another Naturalpoint device to help quadriplaegic kids play music through his laptop on the wards. We'll follow up on that story in a later issue, but for now, check out the community pages of **www.re-mission.net** to see what good gaming can do.

Player power

Ding-dong, the witch is dead: UbiSoft dumps Starforce

One of PC gamers' greatest bugbears is dead – or, at least, has scuttled underneath the sofa to lick its wounds. Starforce is the oft-criticised copy protection tech employed on many recent games and it's been accused of everything from breaking DVD drives to stealing people's mothers. It seemed unassailable, until the announcement of a $5m lawsuit against UbiSoft by a group of gamers convinced their PCs had suffered harmful security breaches thanks to Starforce.

As a result, Ubi's forthcoming releases, starting with *Heroes of Might & Magic V*, won't have a Starforce sting attached. No word yet on what the copy protection will be, but for the many gamers suffering Starforce headaches, this can only be good news.

FACT!

According to Money magazine and www.salary.com, Software Engineer is the best job in the US. EA's Director of Technology was described as a man living the dream.

Bluetooth 2.0 arrives
Our favourite Danish king gets an upgrade

Apple may be in the van of the Bluetooth 2.0 assault after updating it into the PowerBooks range, but you can be sure the tale won't end there. Just as with USB, Apple is taking a chance and integrating Bluetooth 2.0 +EDR into its latest range, hoping that the rest of the world will follow suit and begin

churning out geek-pleasing gizmos, just as happened with USB. And why not? The advantages of Bluetooth 2.0 are few, but important. Firstly, it will triple previous speeds – up to 3Mbps, and have increased security. Combine this with an all important drop in power consumption, inklings of easy, multi-device links and a 300m range and it's easy

to see why its not such a long-shot after all. It won't be long before 2.0 spreads, it's already showing up among speakers and Dell's XPS Mobile system and, with all the possibilities churned up by the unholy union of Windows and the Mac, a wireless, functional world may be available for all.

Let's hope it's used for more than just copying pictures of your bum to friends' mobiles.

WHO IS…
Dr Uwe Boll
Film Director

Film director? Why should we care?
Because Boll specialises in game/movie adaptations. His company, BOLL KG, proclaims itself 'Leader in Video Game Adaptations.'

Cool! What game-to-film conversions has he worked on?
He's behind House of the Dead, Alone in the Dark and Bloodrayne, so far. He also has licenses to Postal and Far Cry.

But weren't those films all a bit sh…
Ahem. His movies have been almost universally criticised, yes. All of his released adaptations are on IMDb's 'Bottom 100' list and he's often accused of straying from the source as well. Despite this, he maintains a cult following. He also claimed he could have done a better job of the Doom movie.

What's next for the good Doctor?
Expect to see In The Name Of The King: A Dungeon Siege Tale out by the end of the year. Incredibly, he's managed to round up indie hero Ron Perlman, a confused-looking Ray Liotta and the ever-ridiculous Burt Reynolds to star.

Blu without you…
No sign of Blu-ray yet, so what's the state of play?

Missing, presumed far too expensive to produce without making horrible financial losses.

We got our hands on a Blu-ray drive two months ago and, despite *PCF*'s reputation for hanging ten at the crest of technology's wave, you may be wondering why we haven't seen them slotting onto the shelves of shops everywhere. Well, a revelatory report by a US research company called In-Stat attempted to tot up a bill for the production of a blue laser player, and came up with a fairly staggering figure of $400. This includes both material costs and royalties for codecs – including the syringe full of copy protection

> **"Boffins have already created a four-layer, 100GB disc"**

tech pumped into each and every drive. This, of course, doesn't bode well for the eventual retail price of units, but while news of this nature makes us weep into our DVD drive trays, better tidings are on their way.

Wholly dissatisfied with a mere 25GB on a single layer Blu-ray disc, and 50GB on a dual layer one, storage media company TDK has declared its intention to squidge together eight wafer thin layers, thus creating a 200GB club sandwich of a disc. The company boffins have already produced a four layer disc, which

maths fans will accurately predict as 100GB in capacity, and that particular flavour of BD-R should arrive in shops at some point in the next year.

In keeping with this trailblazing (or at the very least attention deficient) ethic, TDK has also begun shipping the first recordable Blu-ray media to shops in the US, despite the aforementioned fact that drives remain unavailable. This first wave of writeable BD-R and rewriteable BD-RE discs are bog-standard single layer 25GB specimens and will retail at $20 and $25 respectively. With the lack of a drive to use them on, the age old jokes about expensive coaster sets are almost a given.

Mickey Mouse is watching you

GPS has been getting a bad rep lately, whether it's errors showing up on some SatNav systems that direct drivers to almost plummet over a 100ft cliff in the aptly named Crackpot, North Yorkshire, or the 10,000 cars routed through the

town of Barrow Gurney every day (see last issue). Perhaps most disturbing of all has been Disney's foray into GPS. The House of Mouse is releasing a phone that's aimed at worried parents and their children. The phone's software will allow spending limits to

be set on the child's calls and, controversially, includes a GPS system that enables Uncle Walt to track wherever the beleaguered kiddie is. Parents can then sleep easy, knowing that Big Brother/Mickey Mouse is watching over their children.

Great novelty value, but it does expose the far from scintillating gaming performance.

Hell freezes over

Windows on a Mac is now official – we've even had Apple machines playing *Oblivion*. Oh, the humanity…

Microsoft has released an application that enables PCs to run Apple OSX. Sounds about as plausible as Hayden Christiansen winning an Oscar, doesn't it? And indeed, it's very much not the case: but the reverse has happened. Mere days after we'd sent last issue to the printers, containing a tutorial on installing Windows XP on an Intel Mac with open source tools, Apple released a free app named *Boot Camp*. And what it does is enable Macs to run Windows XP.

MAC PACT

It's either genius or idiocy. Genius because anyone contemplating a new PC will now seriously consider an expensive but stylish Apple machine, knowing it will run all their existing applications. And, perhaps, in time they'll boot into XP less and less, favouring the intuitive but more rigid OSX. And in turn, more software and game developers might release more of their products for Macs, and Windows slowly slides out of the world's awareness.

Then again, it could be idiocy, because running XP on a Mac reveals the hardware for exactly what it is – an attractive but otherwise totally unremarkable PC, rendered less attractive because XP's styling doesn't match its brushed metal finish. It could shatter Apple's previously unassailable record for making covetable machines. Or, neither could be the case, and instead power users simply have a new toy to play with.

What we do know, right now, is that once in XP on our MacBook Pro, there is essentially no way of knowing that you're not using what would specifically be termed a PC *[Except for that one button mousepad – Ed]*. Games are a slightly different story – we had both *Oblivion* and *Quake IV* running at acceptable speed on it, though it wasn't happy at high visual settings in either case. This isn't down to borked drivers (surprisingly, the MacBook merrily installed the latest beta ATI PC drivers), but rather the paltry Mobility Radeon X1600 GPU. It's an unimpressive card on desktop PCs, so inevitably the mobile iteration offers even less punch, mustering a mere 1,338 *3DMark06* points at 1,440x900. We also ran *Quake III* on both XP and OSX, where it scored 180fps and 120fps respectively (bear in mind the OSX version was run under code translation). The fact remains, though, that for the first time, the Mac is a viable gaming platform.

This poses a dilemma for *PCF* – if people are buying Macs and installing Windows, should we be running more Apple coverage? Let us know. **pcfmail@futurenet.co.uk**

HEARD THIS?
"We have a history of Mac support, and we have no plans to end that. Our Mac players prefer native software, and our development practice addresses that." Blizzard is sure OSX will remain a gaming platform even though Macs can run Windows.

No nudity please, we're Microsoft

The big M bringing pressure to bear against so-called 'naked' PCs

Free software supporters and Linux vendors are concerned at comments made by Microsoft's head of anti-piracy, Michala Alexander, in its *Partner Update* magazine.

The mag is distributed to PC retailers and the article urges them not to allow customers the chance of purchasing PCs without a pre-installed Windows OS. With the total number of 'naked' PCs predicted to hit the 5% mark this year, MS is warning retailers that these base units are "a missed opportunity not only to sell-in software revenue through the latest version of Windows, but also to sell support, plus a wide range of spin-off services."

There is concern in the open source community that MS is simply using its position in the marketplace to squeeze out competition from free software providers.

Alexander also alluded to the Keep It Real initiative, launched in February, which promised 'feet on the street' operatives who would visit retailers suspected of pre-installing pirated operating systems before selling their machines. She said the role of its investigators was "to provide proactive assistance during customer visits."

This led to concern that MS might 'send the boys round', to try and spy on consumers and retailers eschewing the Windows OS. MS later claimed an error in the copy, however, and confirmed that it would not be engaging in house calls. Shame…

Microsoft is urging undressed PCs to cover up. Such modesty…

NEWS IN BRIEF

Forever friends?
The Xbox 360's tiddly hard disk has been criticised frequently since the console was launched. With 20GB of space available, and only 12GB of it actually usable after all the necessary software is running, things can quickly become very cramped inside the poor little machine. Thanks to the XSATA from Datel you can now piggy-back your PC's hard drive through a device that sits in between the two machines linked via USB. The XSATA makes it possible to transfer data around freeing up necessary space on the console. Priced at £30 it could be yet another worry for the 360's anti-piracy bods.

Chinese chips
The Godson 2, a new Chinese CPU, is apparently ready for its first commercial rollout this Summer, according to Chinese newspaper *People's Daily*. Having successfully fought off claims of an infringement of US-based chip company MIPS Technology the paper claims that the Godson 2E CPU runs at 1GHz, with low-level power consumption, and still posts better figures than a 2GHz Intel Pentium 4 processor. It could be interesting to see how the newcomer fares against the big boys.

Burg3r K1ng
Kotaku.com has found itself on the wrong side of the King. After posting a story about forthcoming King based PC games, Burger King's gaming consultant Greenfield Online threatening legal action, stating that the leaked information was the intellectual property of BK. The fast food giant was pitching the idea of a $4 game being sold with its value meals. There are plans for three titles: one fighting, one action and one racing game. Kotaku.com is refusing to take down its post, so there's still time to check out the King in frag mode…

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STAT!
The number, in millions, of Intel processors that are expected to ship in 2009. That's up from an already mammoth 153 million in 2004.

Net neutrality

Is this the last gasp for untiered internet charges?

The effect may not be immediately apparent, but the recent failure of the United States Senate's Sub Committee for Energy and Commerce to ratify an amendment that would ensure 'net neutrality' could have devastating long-term consequences for end users.

The proposed legislation, backed by all the giants like Google, Microsoft, Amazon, Yahoo! and eBay was dismissed in the lower house, paving the way for a tiered internet where telcos can offer differing price structures for different levels of bandwidth usage. If you think of it like your electricity bill, it's the equivalent of being charged more per unit if you use more electricity. To home users that's almost irrelevant, but to companies like Yahoo!, whose slice of internet bandwidth is colossal, it's a big problem.

No one's saying that these costs will be passed onto the end user – yet. There's no suggestion of a subscription-based Google – yet, but the 'one price for all' system is now on its last legs.

Essentially, this is about the telcos' attempts to prevent web-based services like VoIP from totally decimating their revenues from home phone users, and also trying to grab a slice of the burgeoning IPTV market. But the nasty side effect could be a less diverse and innovative internet. If telcos can dictate the costs of different internet services, it could prevent the free-for-all of design innovation that has allowed new business models like VoIP and online distribution to flourish.

LEGAL ISSUES
During the first round of debates late last year, Google's Vinton Cerf wrote an open letter to Congress suggesting that "enshrining a rule that broadly permits network operators to discriminate in favour of certain kinds of services and to potentially interfere with others would place operators in control of online activity. Allowing broadband providers to segment their IP offerings and reserve huge amounts of bandwidth for their own services will not give consumers the [open] internet our country and economy need." With the failure of this bill, it appears the appeals of lobbyists like him have fallen on deaf ears again. For the sake of maintaining the web's level playing field, we'd best hope that the third time's a charm. Vinton Cerf's full letter can be found at **tinyurl.com/8mvue**.

Will the legislation lead to blue-chip companies hogging all the bandwidth?

Jeremy Laird
BOOTS INTO TOUCH

Is Apple's Boot Camp just the beginning?

Am I the only being on Bill Gates' green Earth who is flat-out amazed by Apple's Boot Camp initiative? The decision to officially support the installation of Microsoft's yucky (in the eyes of Mac users) Windows OS on its shiny new Intel-powered boxes may seem predictable. After all, doesn't the success of homebrew efforts to get XP to jive with the latest MacInteltoshes make Boot Camp a mere inevitability?

If Apple's track record for control freakery and its pathological commitment to a consistent user experience counts for anything, then the answer has to be no. But whatever the merits for Apple itself, it's just plain good news for PC fans. More choice can never be a bad thing, and I for one seriously fancy the prospect of dual-booting OSX and Windows Vista on a single machine.

More tantalising is the prospect that Boot Camp might just be the first step towards the release of a an x86-compatible build of OSX. That would mean real choice and competition in the consumer OS market for the first time in living memory. And that would be a damn fine thing.

Gearedup

THE HARDWARE ON OUR MOST WANTED LIST

Mega monitor
Dell 2007WFP
Price £375 **Available** Now **Web** www.dell.co.uk

This is probably the most important monitor of the next 12 months. On paper it's a minor revision of Dell's outgoing 2005FPW. That monitor, launched back in early 2005, was the industry's first smash-hit widescreener. And despite one or two weaknesses, including backlight bleed, it's still an awfully good display. But the 2007WFP takes over its mantle as the world's numero uno widescreen display. So, what extra goodies does the new 2007WFP bring to the party? Most notably, it benefits from Dell's new chassis design. First seen on the door-

sized 3007WFP, it's a huge advance in terms of perceived quality over the 2005FPW's stand and enclosure design while retaining its best-in-class adjustability. As for image quality, the native resolution of 1,680x1,050 is simply ideal – enough to deliver eye-popping detail without completely overwhelming a mid-range video card. The 20-inch diagonal provides plenty of screen real estate. And the quoted brightness and pixel response ratings of 300cd/m^2 and 16ms are no doubt hugely understated in typical Dell fashion.   **LCD standard**

Colour depth
The 2007WFP packs an S-IPS panel which delivers the best colours of any current LCD technology.

Improved clarity
Compared with the outgoing 2405FPW, image quality specs are largely unchanged. But the old monitor's one weakness has been addressed – the contrast ratio rating has climbed to 800:1.

Solidly built
Dell's latest chassis design is as classy as they come. It also offers a huge range of adjustability including portrait mode, height, tilt and swivel.

Better connections
With DVI, VGA, S-Video and composite inputs, the 2007WFP has all the bases covered, and that includes full HDCP support.

Portable storage
➔ Fujitsu MHV2200BT
Price TBA **Available** Summer **Web** www.fujitsu.com/uk

Lagging behind their bigger desktop brethren in terms of both storage capacity and performance is a simple fact of life for laptop hard drives. But with 500GB desktop models now available from all the major manufacturers, the 120GB maximum capacity of existing notebook disks must still be a little humiliating. So, it's Fujitsu to the rescue with the announcement of the mediocre-monikered but conspicuously capacious MHV2200BT. It ups the mobile drive ante to an exceedingly healthy 200GB from a standard 2.5-inch form factor. But note, this is a SATA-only drive, limiting it's upgrade utility for all but the latest lappies. **Tiny tyro**

Mobile media
⬅ Archos AV 700 TV
Price £480 **Available** Summer **Web** www.archos.com

Roll up for the world's first portable movie player with a pair of integrated digital TV tuners. The Archos AV 700 TV is the proverbial pocket PVR that doubles as a full-function set top box complete with 40GB of hard disk storage and a seven-inch LCD display for movies on the move. With two DVB-T tuners on-board the capacity to record one channel while you watch another is a given. But the ability of the external antenna to allow reception at ground speeds of up to 81mph is more of an eyebrow-tweaker. Particularly when you consider the difficulty most Brits have tuning in while stationary, with the aid of a huge roof-mounted gantry. **Go-anywhere PVR**

Micro projector
➔ Toshiba FF1
Price £650 **Available** Now **Web** www.toshiba.co.uk

A battery powered, palm-sized projector that comes complete with a foldable screen and a customised carry bag. Oh yes, big-screen *Oblivion*-style adventuring will be yours any time, any place, anywhere with Toshiba's funky new FF1 projector. Its impossibly compact dimensions (it weighs just 565g) are made possible by a tag team of conventional DLP projection and new-fangled LED lamp technology. But is it any good? Well, many of the headline specs make for reassuring reading. The 800x600 native resolution will do full justice to DVD movies and the contrast ratio of 1,600:1 is enough to spank high-end projectors of just a year or so ago. More worrying, however, is Toshiba's mystifying decision not to quote a brightness rating. **Big idea**

Super squeaker
⬅ Microsoft HD Optical Mice
Price From £20 **Available** Now **Web** www.microsoft.co.uk

Ubiquity and Microsoft are peas in a pod. But even if the Big M hasn't achieved quite the same stranglehold over the input device market as it has with operating systems and office suites, there's still a very good chance you spend some quality time riding an MS-branded rodent across the web. So, you'd better take this new line of so-called 'HD' mice seriously – even if Microsoft's claim that its new High Definition Optical Technology is two generations ahead of the competition is less worthy of your consideration. Still, even the Wireless Notebook Optical Mouse 3000 packs a 1,000 dpi sensor with a 6,000 frames per second capture rate. So, expect performance and responsiveness to be competitive. **Precision and poise**

Triple threat
Samsung Q35

Price £995 **Available** Now **Web** www.samsung.co.uk

Listen up, kids. For the best compromise between portability and usability, 12 and 13-inch widescreen latops are where it's at. OK, if you want to get some serious shader-powered gaming done, only a 17-incher will deliver the pixel pushing power to play the latest titles. But for everything else, 12 to 13 inches provides a genuinely usable keyboard, 1,280 x 800 pixels or so of desktop real estate and the sort of lush DVD playback that will have you sneering at the feeble screens the suits in business class have to put up with as you devour the latest flicks from the cattle class cabin at 35,000 feet. Even better, with the launch of Intel's latest and most definitely greatest mobile CPU (none other than Core Duo) there's nary a performance compromise to be made in the name of portability. Even a wafer thin example like this impossibly desirable Samsung Q35, which weighs just 1.9Kg and is claimed to be the world's tiniest dual-core lappy, has enough processing punch to decode HD video content without dropping frames. And with an 80GB hard drive and an integrated dual layer DVD burner, it'll do the desktop replacement thang, too. Astonishing.
All things to all men

Three alternatives…

Rock Pegasus 330

Price £880 **Available** Now **Web** www.rockdirect.com

Remember Sony's world-beating S-series laptop? Well, this Rock shares an identical 13-inch form factor and adds dual-core processor goodness. All for half the price of the Vaio.

Fujitsu Amilo Si 1520

Price £800+ **Available** Summer **Web** www.fujitsu.co.uk

Tiny notebooks used to come with huge price tags. Not any more. This 12-inch widescreen beauty packs Core Duo and is yours for well under a grand. Portable perfection?

Apple MacBook

Price £1,000 **Available** Summer **Web** www.apple.com/uk

Expected to appear any day now, Apple's new consumer-centric notebook will be a 13-incher powered by Core Duo. Dual booting OSX and Vista for a grand? Yes please.

ANALYSIS

LARGE LCDS LAGGING BEHIND?
GOODBYE BLURRING, HELLO INPUT LAG
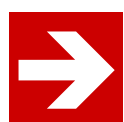
Abysmal pixel response has been banished to the annals of LCD monitor history. With the very latest panels rapidly homing in on the 1 millisecond barrier, even the most sensitive frag-happy gamers now concede that LCD pixel response performance is painfully close to becoming a non-issue.

But don't break out the champers just yet. Sinister talk of a completely new type of display problem involving LCD monitors has recently cast a menacing shadow over tech-savvy forums across the internet. Typically known as 'input lag' this new terror is entirely unrelated to pixel response. In fact, it involves the apparent delay some LCD owners are detecting between the output signal from their PC's video card and the resultant screen update on their LCD monitor.

Typically, this is noticed in the form of sluggish mouse response on the Windows desktop or 'laggy' mouse inputs when playing games.

Do not, however, panic. Granted, all LCD monitors must process the incoming signal, whether analogue or digital, before mapping it to the pixel array. Therefore all exhibit a degree of lag between receiving a video signal and displaying an updated image. But for the vast, vast majority of current LCD monitors, the time taken is well below the threshold of human detection, measuring less than 10ms (the lag exhibited by CRT monitors, by contrast, is measured in nanoseconds – almost nothing, in other words).

However, the latest generation of large LCD panels manufactured using a technology known as PVA (Patterned Vertical Alignment) appear to suffer enough sufficient input lag to prompt some users to make complaints to their respective manufacturers. Monitors effected include Dell's 2405FPW and Samsung's new 244T, both 24-inch widescreeners. *PCF* is still investigating the problem, but for now the best advice is to try any PVA-equipped panel before you buy.

As LCD displays get larger, input lag can become more noticeable. We suggest you try out your enormo-monitor before parting with any cash.

Games latest

THE GAMES TIPPED TO BE BIG AT E3

James Carey
BLOG STANDARD

£10 says there's an Apple tech demo next month

Forget PhysX. After comparing the results of Ageia and non-Ageia Ghost Recon: Advanced Warfighter, I'm not convinced there's a place for the new cards.

I'm all for more physics in games, but do we need new hardware to do it? Cell Factor is awesome, and we'll be going into more depth on that soon, and GRAW with PhysX is certainly a marked improvement over GRAW without, but does the expensive trinity of graphics card, CPU and RAM need a new addition? You get the idea. Physics is a Good Thing, new hardware costs are Bad Things, especially when the new effects are based on a software engine…

But enough of my ill-informed hardware pontificating, it's games they pay me for and games I give you. The fools in charge have given me an extended Games Latest section this month, so I can bring you the latest info we have before I toddle off to LA for E3. Previews of Bioshock and Alone in the Dark lie but a page or four away. I'll be updating the new PCF Blog (blog.pcformat.co.uk) while I'm out there at the Expo so by the time you read this it should be filled with timely gaming goodness.

Underneath all this visual splendour, there's a taut, tactical game, too.

Crysis
Are Crytek's plans a Crysis for EA?

DUE DATE Jan 2007
PUBLISHER EA
DEVELOPER Crytek
WEB www.crysis.com

It seems highly unlikely, but according to online reports, Crytek's breathtaking new game *Crysis* won't see the insides of an Xbox 360 or PS3. Considering Crytek is now signed with EA, well known for the scattergun approach

"Crysis is stunning, and raises the bar in the same way that Far Cry did"

of multi-format releases, it's strange to see such a bold statement of PC-only intent from the developer. In an interview on **www.computerandvideogames.com** Crytek CEO Cevat Yerli said: "It's a matter of focus, PC is our focus right now, we were born there and we want to showcase what we can do there, before we make any move onto consoles. If there's ever a console version it will be later – if at all." This would seem to follow on from the way *Far Cry* underwent a seriously hefty change before appearing on the consoles after the PC game's released. Even the mighty *Oblivion* suffers somewhat on PC from console hangovers like the speechcraft system and mouse-unfriendly lock-picking, so to hear that the PC is Crytek's sole interest is very encouraging. *Crysis* itself is utterly gobsmacking, lifting the bar visually and conceptually in the same way *Far Cry* did a few years ago. Although we're promised a totally new experience, comparisons are inevitable, especially when such lush vegetation is on display. *Crysis* might just be the first game where the environment isn't merely the static backdrop to the adventure though, it's an essential tool, and has a crucial effect on the way that you play.

GOSSIP!

Junglist massive
Don't forget the insect repellent…

Yes it's pretty, but the work Crytek is putting in to what it calls 'readability' is far more interesting. As with Far Cry, Crytek wants to be at the top of the AI game with Crysis and want players to be able to 'read' what a given opponent is 'thinking'. Virtually everything in Crysis is physicalised and a player brushing through leaves can even break those fronds or dislodge other material, essentially allowing the AI to track your movements by spotting that telltale wobbling leaf. Crytek wants players to use that knowledge to outsmart opponents, rather than merely outgun them.

Look at the normal mapping on that aspidistra! It's the future of games!

Just Cause
Fathers for Justice in City of Heroes spin-off…

DUE DATE December   PUBLISHER Eidos
DEVELOPER Avalanche WEB www.justcausegame.com

Well, not really. It might be worth pitching that one to NCSoft though… No! *Just Cause* comes to us from Eidos, and the lush early shots of backgrounds we've seen are blowing us away. Daring to tread the ground that *Far Cry* opened up and *Boiling Point* couldn't quite finish properly, *Just Cause* features a breathtaking outdoor tropical paradise as its setting. Brilliantly, the developer Avalanche (made up of former members of the *Battlefield* and *Chronicles of Riddick* teams) has created a go-anywhere, do-anything island 35Km^2 in size with over 300 towns and settlements to discover. There's a 30 minute day/night cycle and a dynamic weather system in there too.

You'll be playing tough CIA agent Rico Rodriguez (wasn't he in *Sunset Beach*?) trying to prevent an international incident as a banana republic tries to exchange bendy fruit for WMD as its major export.

There's are elements of *GTA* in there with island 'provinces' up for grabs as you complete missions and win favour with the locals, and of course, when there's loads of island to get around it's only natural that *Just Cause* is littered with controllable vehicles. Planes, boats, cars and even parachutes (complete with car-towed parascending) will make an appearance later this summer.

The most impressive rendering of an Eighties mullet we've ever seen…

"Just Cause features a breathtaking outdoor tropical environment as its setting"

in the pipeline

Que sera, sera? Not on our watch: the future is yours to see.

JUNE

Sensible Soccer
The classic big-headed arcade football jaunt is back with all the ridiculous banana shots you could wish for. Codemasters has narrowed down the timescale and promises it'll be ready for June. World Cup fever anyone?
www.codemasters.co.uk/sensiblesoccer

SUMMER

Soul of the Ultimate Nation
What do you get if you mix *Dynasty Warriors*' frantic arcade nonsense with *Dungeons & Dragons Online*'s instanced multiplayer arenas? The clunkily titled *Soul of the Ultimate Nation*, that's what.
www.webzengames.com

Age of Pirates: Captain Blood
Following on from *Caribbean Tales* comes Akella's game based on Rafael Sabatini's novels about the pirate, Captain Blood. It is one of the latest titles to have signed a deal with Ageia to use its new PhysX chips.
int.games.1c.ru/ captain_blood
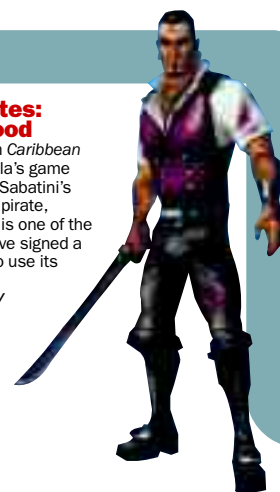
Beta eater

Bringing you early beta tests on the biggest MMOs.

Oh yes, it's that beta time again! We've moved home, but we're still bringing you secured test keys on the biggest MMOs.

First off is **Archlord**, published by Codemasters and developed by NHN, one of the largest Korean MMO developers and publishers. The overarching premise is simple but utterly unique: each month all the characters compete against NPCs, other characters and finally the incumbent Archlord to become the supreme ruler of the world of Chantra for 30 days.

We also have 50 keys to give away for kung-fu kicking MMO, **9Dragons**. Published in Europe by Persistent Worlds, this martial arts-based title sees you throwing your lot in with one of the nine clans, or Dragons, and learning their secrets and different chop-socky fighting styles.

Get in at the ground floor by visiting **www.pcformat.co.uk** and clicking on the competitions link. Don't forget, we're still taking applications for Persistent World's other MMO, **Carpe Diem**, at **betaeater@futurenet.co.uk**.

Meet this testy little fellow online in *Archlord*.

Flatout 2
Terrorise this…

DUE DATE May
PUBLISHER Empire Interactive
DEVELOPER Bugbear
WEB www.bugbear.fi/flatout2

Dealing on the same sensibilities as *Destruction Derby*, but with a much-needed nitrous injection, *Flatout* did well enough to deserve a sequel.

After a bit of quality time with the *Flatout 2* preview code, most of it spent sideways in a shower of sparks, we can confirm that this is currently a *lot* of fun. Big powerslides and tremendous straight-line speed are the order of the day, and the game runs at an almighty pace – this is despite the confetti-like spray of street furniture, bodywork and cartwheeling drivers ejected from their battered chariots.

The new city locales are a definite nod to *Burnout*'s glossy level design. Our only fear is that the lack of traffic leaves them feeling a bit sparse, though if it's company on the road you're looking for, the six players with full voice chat in multiplayer should do nicely.

Darkstar One
Some people call it the space cowboy

DUE DATE September
PUBLISHER CDV Entertainment
DEVELOPER Ascaron
WEB darkstarone.ascaron.com

Clive Owen has come a long way since *Privateer 2*, but what of the the space opera genre? Smuggling, trading and mission-based larks are here, but tied around a persistent storyline.

You're left a nifty ship by your deceased father, which acts almost like an NPC in an RPG title. The different upgrades in the game change the look and feel of your ship depending on how you want to play.

Ascaron has used the considerable expertise it gleaned from the *Patrician* games to create persistent galactic economics stretching across hundreds of unique and explorable star systems. All the races in the game are obviously different and employ varied combat strategies in battle. Essentially it's still an *Elite* clone, but with a vast continuous universe to explore it should still be worth a look.

It's resource gatherin', alien shootin' time…

SUMMER

The Movies: Stunts and Effects
After gaming guru Peter Molyneux's Lionhead Studios was snapped up lock, stock and barrell by Microsoft Game Studios, you could be forgiven for expecting this title to be about PR stunts and translucency effects. But it's not, we promise. **www.themoviesgame.com**

Stronghold Legends
The next in the popular castle-based RTS franchise *Stronghold* is set to hit our screens later in the year. Budding warlords can opt to play as King Arthur, the Germanic Siegfried or even Mr Fangtastic himself, Count Vlad Dracul. **fireflyworlds.com**

Dungeon Siege II: Broken World
Having acquired the rights to the *Dungeon Siege* series, 2K Games has announced that its first title will be an expansion pack for the sequel. The booster will have a new campaign, new race and a multi-class character system. **www.gaspowered.com/ds2**

AUTUMN

Battlefield 2142

Bicentennial Recurrent War theory proved, say eggheads

DUE DATE TBA **PUBLISHER** EA
DEVELOPER Dice **WEB** www.ea.com

Now, don't take this the wrong way, but *BF2142* will be to *BF2* as *Vietnam* was to *1942*. That is to say it's not a new engine, just a new theatre, a new age and a truckload of new units.

The next Ice Age is engulfing the Earth, and mankind has descended into panic. The encroaching ice has caused global warfare as factions vie for the ever-decreasing resources. The sides are roughly split between a pan-Asian coalition and, somewhat oddly, the European Union. There's no mention of fictional American involvement yet, which we reckon means a late entry into the war from the Yanks via an expansion pack six months down the line.

Expect a whole bunch of new hi-tech weaponry such as deployable sentry guns and EMP grenades, but most excitingly, we can guarantee the involvement of that perennial favourite among certain *PCFormat* scribes – Big, Stompy Robots.

On the surface, it's a design doc not dissimilar to that of the other big sci-fi vehicular combat FPS out this year, *Quake Wars*. Is it just us, or is this similar to Hollywood's habit of releasing similar blockbusters just a few months apart in order to maximise exposure? We were thinking about the releases of *Antz* and *A Bug's Life,* or *Deep Impact* and *Armageddon…*

The lamentably underused commander mode and squad systems are retained from *BF2* as are the inexplicably popular ranked servers and unlockable rewards of medals and new weapons. Hey, if it's what the kids want…

Ice! War! Big, swaggering robots that draw favourable comparisons to ED-209! It's all here, folks…

LEGO Star Wars II: The Original Trilogy
Building on the universal success of the first *LEGO Star Wars* game, *LucasArts* have stepped in to publish it this time around. Covering episodes *IV*, *V* and *VI*, you can now create your own characters by mixing and matching body parts. Princess Yoda, anyone? **www.lucasarts.com**

Superbike: Riding Challenge
Milestone, the team behind the *Superbike* games are back with what promises to be the most accurate bike sim yet. The game features full control over your customisable riding avatar as well as the bike itself.
www.blackbeangames.com

Scarface: The World is Yours
While Pacino preferred to lend his likeness to *Scarface* rather than the ropey *Godfather*, that's no seal of quality. If you can look past the 'Tony survives the final scene of the film' bit though, there may be something in these cock-a-roaches.
www.scarfacegame.com

AUTUMN

Alone in the Dark

Ghostly franchise returns…

DUE DATE October
PUBLISHER Atari
DEVELOPER Eden
WEB www.atari.com

With all the fuss about next-gen consoles being bandied around the industry at the moment, it's good to hear that one of the seminal PC franchises, *Alone in the Dark*, is not going to solely for those game-box owners. Fourteen years after the first ground-breaking, scary and downright frustrating title in the series hit our screens, the next instalment has just been announced for PC and is sure to get hearts pounding once more.

Again it's going to be uniquely French, being spawned from Eden Games, a subsidiary of the original publisher, Infogrames. It will undoubtedly be a beautiful thing to look at, but whether you'll still be getting stuck by some pathologically awkward camera angles is anyone's guess.
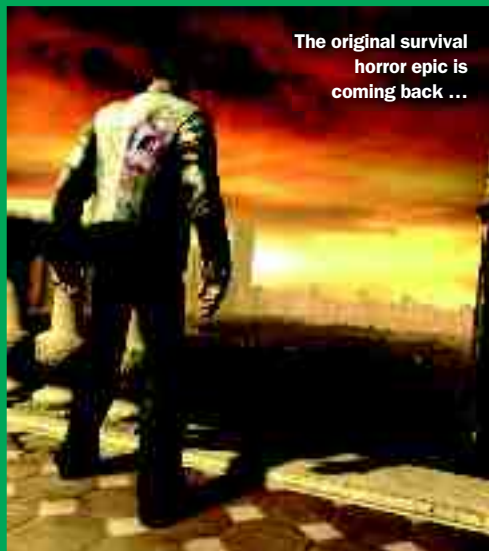
The original survival horror epic is coming back …

Lord of the Rings Online
Shadows of Angmar

One MMO to bring them all…

DUE DATE Christmas
PUBLISHER Codemasters
DEVELOPER Turbine
WEB www.lotro-europe.com

With so many Orcs, Elves and Wizards populating the MMO world, it's hard to see how yet another entry into the market can survive.

Unless, of course, you hold the licenses to all three *Lord of the Rings* books, and *The Hobbit* too... Turbine is set to release the first instalment of *LOTRO* at the end of the year. Covering the realms, people and storyline of the first book, your character has to play their own part of the war of the ring. And yes, Tom Bombadill's in it, too.

Because of the incredible influence that Tolkien's books have had on the fantasy genre, it's perhaps inevitable that *LOTRO* looks so much like the current crop of fantasy MMOs. With such a huge license, the game is bound to sell by the bucketload, but it is something of a shame that, at present, it closely resembles a very good, run-of-the-mill MMO.

Frontlines Fuel of War

Some people call it the space cowboy

DUE DATE TBC
PUBLISHER THQ
DEVELOPER Trauma
WEB www.thq.com

The saga of Trauma Studios is well known. The mod team that brought *Desert Combat* to *BF1942* (and designed a mod that became more popular online than the original game) was picked up by DICE. Then, Trauma was dropped shortly before *BF2* went on release. Well now key members of Trauma are back, under the new name Kaos and backed by THQ to bring a near-future FPS to a PC near you next year. *Frontlines: Fuel of War* looks like it'll very much be of the same stable as *Desert Combat*. Vast open areas of vehicular conflict with infantry backup.

Futuristic BF2-style action? Oh, go on then…

It's often been said that *BF2* has become and infantry-lead game so perhaps this is a move by the former Trauma team to go back to the more open maps and vehicle battles from *Desert Combat*. Details are scarce right now, but you can bet we'll be keeping an eye on this one.

WINTER

Infernal
The third-person shooter putting you in the role of an agent for the Devil has had a rethink. Playlogic and Metropolis have decided to change the name from *Diabolique: License to Sin* to the simpler Infernal.
www.infernalgame.com

Arthur and the Minimoys
The game and the most expensive European animated film ($85m) are set to be released simultaneously. Atari has worked with the film crew from day one to translate Luc Besson's directorial vision onto your monitor.
www.atari.com

Rayman 4
The fourth instalment of the popular franchise is going back to its roots being developed by Ubisoft's Montpellier studio which is headed up by the creator of *Rayman*, Michel Ancel.
www.ubisoft.com/uk
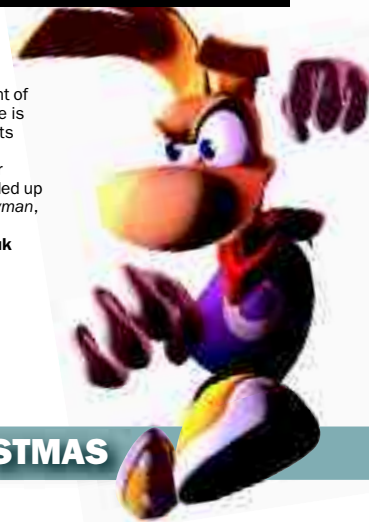
CHRISTMAS

Bioshock

It's time for Grim Game Premise of the Month…

The spiritual successor to *System Shock 2* is on its way, thanks to Irrational Games. The developer promises some seriously disturbing yet cerebral action in this RPG/shooter, slated for an early 2007 release. The drowned city of Rapture, an Art Deco utopia populated by the great minds of an alternate 1920's world is slowly succumbing to the pressure of the ocean. An accident leaves your character stranded in the city, slowly uncovering the secrets of what happened to the master race that dwelled there. Irrational has been light-hearted of late, with tongue-in-cheek hits like *Freedom Force* and the tactical action fest that is SWAT4, but now it's going back to its much darker roots. The little we've seen of Bioshock has already given us the willies.

Monstrously deformed men and women of science, trapped by their own greed for progress and genetic experimentation, are now reliant on unpolluted children to… how can we put this politely… *process* the fluids of the dead, reconstituting the juices into a usable form for their elders. And you can bet that's just the tip of a much, much grimmer iceberg…

Techically, Bioshock could turn out to be a marvel too. It features easily the most impressive, realistic water effects ever seen in any game. Ruptured domes pour water into the halls of Rapture, splashing and swilling around just like the real stuff, and even bouncing off characters as they pass through the falls. Best get your physics cards out… **PCF**

Elveon
The titular book of Elves charts the millenia-long saga of the Elven Civilisation. Having signed up to use the *Unreal 3* engine, this action RPG should give you something to brighten up those tired gamers' eyes.
www.elveon.com

SUMMER 2007

TBA

Command & Conquer 3
With the return of Kane and the post- and pre-mission FMV, fans of the series are sure to be in raptures at the announcement of the third Tiberium War. With an updated version of the *Battle for Middle Earth 2* engine, it's going to be a looker, too. **www. commandandconquer. ea.com**

Huxley
Webzen has recently released new screens and movies of its gorgeous MMOFPS. Our excitement is tinged with disappointment, however, at its decision to limit the beta testing to Asia and a small part of the US. **www.huxleygame.com**

Jim Rossignol
JET PROPELLER

Watchthisspace

THE FUTURE IS HERE. JIM ROSSIGNOL TAKES A PEEK

Hypersonic in the Outback
Revolutionary jet engine promises to shrink the world

It might not look particularly safe, but this really is the future of air travel.

Tests are underway in the Australian Outback to see how efficiently a new design of jet engine works outside the laboratory. Hurled up 300km into the sky by a conventional rocket engine, the scramjet test unit, called 'Hyshot IV', returned to Earth as part of a test to see whether it could manage its prospective speed of 8,000 kilometres per hour, or Mach 8. By comparison, the fastest current jet engined craft, Lockheed's SR-71 Blackbird, achieves a top speed of around Mach 3.2.

The tests come as part of a commercial project to develop a working scramjet engine, a design that has previously only been taken seriously by NASA and military research projects. Scramjets are uniquely efficient jet engines which completely lack moving parts, like a conventional rocket engine, but they also rely on airflow rather than their own oxygen supply, like a jet. Scramjets must be accelerated to supersonic speeds before they can activate, but once switched on they should be able to achieve staggering speeds, cut commercial flight times and reduce the cost of launching satellites by a huge margin. Not having to carry its own oxygen means a scramjet vehicle would be far lighter than a rocket-powered craft, but its potential speeds mean that they could reach destinations *anywhere on Earth* within a 90-minute journey time. (A concept that was first explored in 1983 by the TV movie Starflight: The Plane That Couldn't Land, starring Lee Majors...)

Concorde's Atlantic crossings might have seemed quick at the time, but the promise of being able to get from London to Sydney in just a couple of hours – a journey that currently takes anything up to 20 hours – is a dream that just won't go away. And what's more, it'll be a reality fairly soon.
www.qinetiq.com

Robot moose vs hunter

Nova Scotia's National Resources Department has been trying everything in its power to defend the wild moose, which was recently declared an endangered species. The spearhead of its operation is a robot decoy named Bullwinkle, which has recently proved his worth by catching hunters in the act. One hunter has now been banned from hunting for 20 years, while another eight residents of Guysborough County will face the courts later this spring, all charged with shooting at the robo-moose.
www.gov. ns.ca/natr

This month in
Science
June, 1966

The first US probe landed on The Moon. It marked the point at which the US began to catch up with the Soviet programme. NASA also revealed plans for a Moon base as a waypoint for the planned trip to Mars.

Thought-powered computer revealed
Brainwaves deciphered by clever maths

Designing a computer interface that works with human hands isn't so hard – they might vary in size, but they're all pretty much the same structure, hence the universality of keyboards, mice and joysticks. But designing an interface that works with brainwaves is another matter, since they vary hugely from one person to the next. What stays the same, though, is that brainwaves fluctuate when we try to perform mental actions, and it's this principle that powers the BCCI, or thought-controlled computer.

Engineers at the Fraunhofer Institute in Berlin have developed algorithms that will spot patterns within someone's brainwaves, allowing a computer to 'learn' what actions they are performing when following the tutorial for the BCCI. This learning system means that people can use the brain interface device efficiently within just half an hour. Consequently the skullcap device could easily be used in situations where people are unable to use their hands, or as a secondary control device for machinery, or even as a quirky game controller with a fraction of a second advantage over traditional methods. **tinyurl.com/pnlb8**

Useful, but not what you might call stylish.

Thewebpages

ONLINE RUMOURS AND RUSES

Any port in a storm
MS launches site to communicate with the open source community

Microsoft has given a web-based face to its relatively unknown Linux Labs. The 300-server strong setup of Linux machines, used to test the capabilities of its rival, and to experiment with compatibility with its own products, now has its own PR machine, known as Port 25.

Bill Hilf, Microsoft's General Manager of Platform Technology, explained at the recent LinuxWorld conference that this was a place for feedback about his extensive project. The site represents an attempt to connect with the Microsoft users who combine the Beast of Redmond's products with Open Source hippyware.

That Microsoft has such a lab might come as a surprise to many. However, while home users may still see Linux as something of an oddity used by very few, Microsoft recognises it as Windows' most significant rival. When it comes to internet servers, Linux is run on over 60% of machines, compared to Microsoft's meagre 25%.

THE BEST FREE BLOGGING SITES

My Space
www.myspace.com
Thanks to its recent acquisition by NewsCorp, MySpace has become the poster-child for blogging, video, music and customisation, incorporating the network design of Friendster into one massive mega-fad.

Blogger
www.blogger.com
One of the original free blogging tools, snapped up by a wise and timely Google, and then redesigned to be much more user-friendly, if losing something of its community charm.

Live Journal
www.livejournal.com
Until MySpace, LJ probably boasted the most integrated community of users, all linking to one-another creating a giant self-referential angst-fest of angry teenagers and, er, other angry teenagers.

WordPress
wordpress.org
Describing itself as "free and priceless", WordPress is the Open Source solution to blogging, not splattering your blog with ads and forced links, but instead a server-end, completely customisable tool. The best there is.

Kittens
BAGHDAD GIRL
This month, The Web Pages is concentrating on blogs, for no good reason. And here is possibly the most conflicting and contrary blog in existence. Photograph after photograph of cute kitten, and then, "Today the weather was very nice, no cars and no bombs."

The writing of 14 year-old Iraqi Raghda Zaid, Baghdad Girl is a constant assault on the senses, as her powerful enthusiasm for cute kitties is occasionally punctuated by a report of the horror in which she's living.

"Four days ago a big explosion happened near my house, it was done by a bombcar, this bombcar cost people life's, broke windows, and brought fear. Two of those who died were children about 10 years of age and they used to bring us fuel for our electrical generator…"
baghdadgirl.blogspot.com
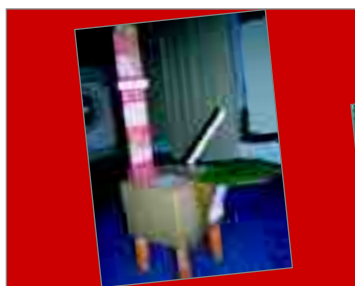
Auctions
BAYRAIDER
Spreading around offices like wildfire, bizarre eBay sales are a constant source of literally seconds of amusement. Remember that time someone put Iraq up for sale? "New owner found it to be more responsibility than he was ready for, looking for quick sell." It reached $10,000,000,000 before eBay took it down. And that's the catch – they're often gone before you get there. Bayrider is a blog that reports on all such peculiar postings.

A $50 McDonalds gift voucher going for $52, two white hairs from Santa's beard, magic sprouts, and a cardboard scale model of an oil rig, "constructed laboriously from a combination of Tesco Finest range toilet rolls, a disused toaster box, and packaging from various Ikea kitchen utensils," Hurry while stocks last!
www.bayraider.tv

Garfield
TRUTH & BEAUTY BOMBS
Truth And Beauty Bombs is a blog following the hugely important world of web comics, keeping you up to date with all the latest hastily drawn online entertainment. But on this occasion, it's the message board to which we want to draw your attention.

The thread linked to here follows the peculiar results of taking tired old Garfield strips, and removing Garfield's words. The result, as so many point out, is the revealed truth of a pathetic, lonely cat owner shouting nonsense at his sleeping pet.

As the thread progresses, more catch on to the ideal strips for the treatment, leaving Jon bellowing madly at his animal that it is hindering his social life, overweight, and other lunatic outbursts. It certainly makes Garfield worth reading for the first time in many years.
snipurl.com/okbx

And it's run by the majority of the big names, from Google to Amazon to, for many years of its existence, Hotmail.

The history of Microsoft's responses to Linux has not been an honourable one (one MS employee referred to Linux as "a cancer" a couple of years ago). However, Hilf explained at LinuxWorld 2006 that Port 25 was proof of Microsoft's changing position, that it was willing to "live alongside open source".

OPEN UP

The lab began as a part of Redmond's attempts to combat the rise of Linux, but under the management of Hilf is taking a more open stance. Inspired by the responses he received after putting his email address on a Slashdot interview, Hilf explains that he now sees the advantage of, and wants to encourage, "open" communication. "Having a participative discussion around Open Source software and Microsoft technologies is a good thing, not – as many people may believe – something we want to 'hide' or shy away from."

Describing his team as "a bunch of open source guys inside Microsoft", Hilf intends for the Port 25 site to be a great deal more than yet another Microsoft in-house blog, and has designs on it also being a place for posting analysis from the company's

labs, and showing other departments what they think is interesting.

So far the responses have not been particularly constructive, with the free software crowd unimpressed at the site's use of WMV files, .asp pages, and *IE*-friendly designs. Hopefully as the 'new site' furore dies down, and MS perhaps embrace some open source technology on its own site, Port 25 can become a source of positive discourse between the two warring communities. **PCF**

> ## "Port 25 is proof of Microsoft's new attitude to Open Source applications"

Forum
WordPress

This may be the best blogging tool out there at the moment, but it's also the least user-friendly. The excellent support forums clear up any issue you might have, thankfully using simple, noob-friendly language.

wordpress.org/support

Genealogy
MY HERITAGE

If there's one thing people will get defensive over, it's protecting their rights to an announced lookalike. "Sarah looks exactly like Jennifer Aniston," someone will declare, and everyone else will look, then squint, then say, "Well, maybe a tiny bit, if you only look out of one eye." And it's an affront. Now such claims can be tested by Science.

My Heritage offers a free beta service of its facial recognition technology. You upload a photo, it scans the face, probably using Futuristic Techniques, and then spurts out a list of celebrities and the percentage of similarity it believes the two share.

We put in a photo of our own esteemed leader, Mr Oxford, and the results were… fascinating. Apparently, he's made up of 58% Albert Einstein, and, er, 54% Rachel Hunter. *[I'm 112% human?! – Ed.]*
www.myheritage.com

Travelogue
ROFFLES THE BEAR

The *PCF* forum is a hive of intellectual debate, cutting edge contemporary computing comment, and photos of teddies.

Roffles the Bear, since the beginning of March, has been the Official Bear of the *PCFormat* forum. Rescued by PCFFite Dan Morgan (aka Ekona) from a quaint shop in Braintree, Essex (imagine a prison, in Hell), Roffles has begun an exciting adventure, travelling from forumite to forumite for photographed days out. See Roffles in the Stansted airport toilets, or in an office, or even on a train!

THE EDITOR MADE ME INCLUDE IT! I'm sorry. It's a blog about a teddy bear! Why am I writing about this? Help me! How has it come to this? Actually I'm delighted to write this, and my editor is great. No, really he is…
roffles.blogspot.com

Copyright watch

John Walker
LEGAL GUARDIAN

John Walker reports on the grim reality lurking behind the RIAA's latest legal actions

The following pithy response was given to a student, currently being sued by the RIAA for filesharing, when she phoned the RIAA helpline: "The RIAA has been known to suggest that students drop out of college or go to Community College in order to be able to afford settlements."

Cassi Hunt's essay on her experience, originally published in MIT's online newspaper *The Tech*, can be read at **snipurl.com/oxts**. Being sued for $3,750 (£2,152), the US student cannot afford to pay her tuition fees as it is, and has no ability to pay the fine. Calling the helpline for advice, she was told that there was no alternative, and the only considerations taken were medical. And then the opening gem was delivered. Cassi puts is better than anyone else could:

"The Recording Industry of America would rather see America's youth deprived of higher education, forever marring their ability to contribute personally and financially to society – including the arts – so that

they may crucify us as examples to our peers. To say nothing of wrecking our lives in the process. I finally understand what the RIAA meant when [it] told me stealing music is not a victimless crime – the victims hang for all to see.

"Sure, if you commit a crime against someone, you should be held accountable. But I find it horrifying that anyone would single-mindedly and without compassion process people like a meat grinder set to purée."

In other news, Warner Music, Sony BMG, EMI and Vivendi Universal are being sued under the RICO [Racketeering Influenced and Corrupt Organization] Act.

In more other news, Sony is paying $10 million and Warner Music paying $5 million to settle a payola case currently against them for bribing radio stations.

The RIAA has now topped $100 million in profit from its court cases against children, students and the elderly. If you want to donate to those currently being sued by the RIAA, pop along to **www.downhillbattle.org**.

Tuition fees or RIAA fines? Tough choices ahead for file-sharers.
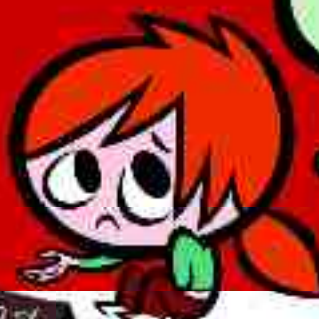
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PCFMail

DISCUSS HOT TOPICS AT forum.pcformat.co.uk

Disorder defined

I was reading the mail by David Amos (*PCF187*) yesterday about how much time he spends in front of his PC. Myself I spend at least five hours each day tweaking my PC to make it run faster. I am an OCD (Obsessive Compulsive Disorder) sufferer. Friends who use my PC say that it's so neat and tidy. In My Documents I have folders and subfolders for the different types of files I save. If I so much as save a single webpage or download one screensaver, I run a system-wide spyware scan.

It gets to where I run at least seven full spyware scans each day. I scan and defrag the drive each day.

There's more but it would take 10 pages to explain how I further tweak my PC.

It was only after reading the mail that I realised this was an offshoot of my OCD, in that I had turned my OCD output into my PC. I am now attempting to alleviate my OPCD, as I have labelled it. I'd like to thank David for sending in that email and *PCF* for mentioning "obsessive compulsive".
ALAN O'CONNOR
custodianguard@hotmail.com

Gloves of meat

Sad but true, I've been reading your magazine for... well... probably 15 years or more? Anyway, enough of that, just wanted to point you at a community website that's slowly growing on the IT underground: **www.meat-gloves.co.uk**. It's an odd mix of technology, computer stuff, and lots of humour, aimed at IT professionals, and is a great place for people in support/development/ working on large IT projects to come and let off steam – mostly by ranting about their users.

It also features my very own hand crafted insult generator – which I believe is probably the best (and most insulting!) on the web… not for the faint hearted.
KRISPY
www.meat-gloves.co.uk

PCF says Tasty meat gloves. It's been a favourite bookmark of PCF's for a while, although the insult generator really isn't for the easily offended…

Woman in white

I have to admit to being embarrassed to ask this one but... here goes.

My girlfriend was bored and leafing through your magazine where you compare the humungous supercomputers and she saw the model wearing the white dress (*PCF183*). Now my life is hell until I can find out where to get her one!

Please oh please help me make her stop! Computer magazines aren't supposed to be for fashion tips unless it's of the bri-nylon and beardy variety. Please can you let me know who made the dress so I can get back to a normal life of *CoD2* cos she won't let me on until she knows or I buy her one!
HELP!
Yours embarrassedly
ROD
PS. Please don't print my email address out of a twisted sense of sadism!

PCF says Sadism shmadism. We're printing the letter as we have the information you want – our model Rachael was, owing to the dreamy theme, wearing a silk slip

PCF was not, unfortunately, invited to London fashion week.

Yes, sometimes even the mighty *PCF* is fallible. Not often though…

found in the Marks & Spencer underwear department. Perhaps not one for public appearances…

Caught out

I am really looking forward to playing *Oblivion* (*PCF* 187, 93%). As your expert advice on the review states that I want only 1MB RAM, it should run really well on my PC!
Great mag
STEVE BIGGINS

PCF says It's a fair cop – sometimes mistakes do slip through. We stand by the claim that you can play it on a 3Hz CPU, though. Just not very well, that's all.

Not from a PR

I'm a regular reader, and since the end of December I've been using a *VoIP Stunt* to make phone calls.

VoIP Stunt is pretty much the same as *Skype*, except the calls to landlines are free to 50 major countries including the UK, USA, and Australia. So I thought I'd give the other readers a chance to save some money – especially as you guys have never mentioned the service. The only catch is that after your initial 30 free calls, you then have to credit your account with 10 euros. You then carry on using the free service, but it gets debited should you call a UK mobile or a country not on the free list.

Also US mobile calls are free, so for a fun Sunday morning but with a few more expletives than usual, just Google a US estate agents and call 'Brett Jr' and ask him what's the cheapest flat he has in Hull.
ADAM

PCF says Thanks for flagging this site up – it seems genuine enough and very cheap indeed.

Mail of the month

OVER TO YOU How willing are you to build your own PC? Find out over on p146

I have had an account with Pipex for several years now, and have recommended Pipex to friends and family who now have their service. Recently I noticed that downloads using Bittorent are very slow. It turns out that all ISPs are using monitoring software that slows down any Bittorent downloads.

I have contacted Pipex and it says that the software is meant to benefit those who only use their connections to surf and email. I pay for a 2Mb service with a 15GB a month download allowance. I never go over this and feel that they should only throttle back my connection if I do go over. What do you think?
STEVE OXBORROW
s.oxborrow@dsl.pipex.com

PCF says While we salute the efforts of a lot of ISPs to bring down prices, there's been a sharp increase in the amount of small print attached. Many 'unlimited' packages now include 'fair usage' clauses, which allow ISPs to throttle usage based on protocol (usually FTP or P2P) or 'peak time' use. Pipex's T&Cs, for example, include some fairly open ended clauses allowing them to manage whatever they want, whenever they want – and many other ISPs have similar contracts. Ironically, we had a chat with BT Openworld this month – one of the first ISPs to introduce 'fair usage', who claimed to never have officially enforced it. A couple of days later it booted 4,000 users from its network. We acknowledge that ISPs must manage traffic, but a little more transparency before people sign up is needed from them all.

Mail in and win

We've teamed up with ace memory suppliers Crucial **www.crucial.com/uk** to give the author of our letter of the month a fantastic 512MB Gizmo! USB memory drive worth over £15. It works flawlessly with every version of Windows after Me.

You can air your views and write to the team at PCF Mail, PCFormat, 30 Monmouth Street, Bath, BA1 2BW, or via email at the address below. Or you can visit our forum at **forum.pcformat.co.uk**.

pcfmail@futurenet.co.uk

Assembly required

Is building a laptop cheaper than buying a ready-made one? **Mike Channell** dons his hard hat and dives in...

We imagine you, noble *PCF* reader, as reasonably gung-ho when it comes to hardware. We see you as perfectly happy yanking out PCI cards and twiddling thumbscrews in the endless struggle for a more potent rig. There is one last taboo, though, that makes even the most hardcore hardware junkie cower in fear – building a laptop. There seems to be something about the dark art of cramming everything you need to run a modern PC into a space that would barely accommodate two copies of *PCF* that means people are loathe to tamper with the innards of a notebook. Well no

more, say we – let us throw off the shackles of the ATX standard and get elbow deep in our portable PCs.

There are some serious benefits to constructing your own laptop. For a start, you can choose exactly what specification you want your components to be – instead of adhering to restrictive manufacturer options. Also, along with your choice of components, once you've found the perfect configuration, you can hit the e-tailers for all they are worth and come away with rock bottom prices.But are standard

manufacturers out for the count entirely? Laptop prices have dropped sharply in the past couple of years, and you can get a reasonably grunty crotch warmer for well under a grand these days. We'll just have to get out our hard hats, pull on our work boots and construct a notebook to take on the manufacturers' might. At the end of it all we may well have a laptop that's been taken to pieces, and not necessarily the one that was delivered that way...

GETTING STARTED
The kit we got hold of was the surprisingly handsome MSI Megabook MS-1022B, available from **www.ebuyer.com**. This includes the actual chassis of the laptop, the

"You can choose exactly what sepecification you want your components to be"

motherboard (which has onboard Geforce 6200 graphics, sound, ethernet and Wi-Fi), battery, screen and keyboard. What this means is that you're in charge of procuring and fitting the RAM, processor, hard disk and optical drive. Be sure to purchase the appropriate items for your kit - the processor for this particular barebones notebook is a Pentium M, entirely different from a desktop processor. Not only that but laptop RAM sticks, DVD drives and hard drives are all smaller than their desktop counterparts.

Build your own laptop

■ Be careful when buying to avoid ending up with desktop components. You should also make sure that you have a small Phillips head screwdriver, and none of that Christmas cracker-originated tat either – a proper, sturdy metal one, alright? **PCF**

"Fitting laptop RAM is a distinctly trying experience"

Driven to construction

Fitting the optical drive is a simple process

» Step 1

The MSI laptop kit arrived with its own custom drive plate. Simply find the two tabs on the existing plate and push them in with the end of your screwdriver. It should pop off with ease and the new fascia will clip on in its place.

» Step 2

The kit comes with a bracket to attach to your slimline drive so that it can be screwed to the chassis. The bracket is screwed to the two holes on the edge of the lowered section of the drive.

» Step 3

Slide the drive into the waiting hole on the side of the barebones system. You should feel a slight resistance as the drive plugs into its socket. All that's left to do now is to screw the drive in place at the two points on the chassis.

Caddy hack

The hard drive fits into a cradle to keep it in place

» Step 1

The slimline hard drive slots easily into the caddy with the pins jutting out through the gap. Make sure the tab pokes out for easy removal if necessary. Be careful when handling your hard drive as bending the pins can cause all sorts of problems.

» Step 2

Unscrew the hard drive panel on the chassis and place the caddy in the gap, slotting the pins in carefully and then lowering the other end of the caddy into place. Screw the caddy into place.

» Step 3

All that's left is to screw the external panel into place to keep the drive secure. The process is arguably even easier than wrestling inside your desktop PC case with a full-sized HDD.

Magic tool
Precision guaranteed

Bolting together a laptop is fiddly. The fat-fingered coud try a toolkit, which you can get by subscribing to *PCF* on p134.

Card tricks
Laptop graphics upgrades are rare

The MSI kit packs a GeForce 6200, but without an MXM slot (that's Mobile eXpress Module, forced acronym fans) the option of adding a high specification mobile graphics card is entirely ruled out. While add-in cards are not widely available at the moment (**www.mxm-upgrade.com** has a single GeForce 6600 model for sale), we can see them becoming increasingly prevalent as more laptops embrace the PCI Express-based interface. The best place for keeping an eye on the market is at the **www.laptopvideo2go.com** forums. It's also worth noting that the forthcoming AOpen 1559 kit does have the crucial MXM slot that could really validate the concept of building your own notebook.

Lay your chips down
The processor must be handled carefully

≫ Step 1

Place your processor in its seat. The chip should drop in without any fuss. The corner of the processor with an arrow in it will be missing pins and line up with the corner of the slot . Instead of an arm, this slot has a screw – turn it clockwise and the processor should lock into place.

≫ Step 2

Peel the tape off the thermal paste on the heatsink assembly and place it on top of the processor, screwing it in. The fan must then be placed in the gap next to the heatsink and screwed in. Don't forget to plug the fan power cable into the three pin socket next to it, lest your board bursts into flames.

Make it snappy
No screws here, just good old brute force

Inserting laptop RAM is a trying experience to say the least. Never has the process of fitting a component felt more like breaking it. There are two RAM slots and the stick must be pushed in at a diagonal angle, until you hear a sickening click. Then press the RAM down until it snaps into the grips. Now go and lie down for a bit until the shakes begin to subside.

Cold play
Keeping things cool

Heat is literally piped away from the CPU to the rear fan using this copper duct. It's very important not to damage this as you remove and refit it.

Upgrade options

It should be reasonably clear from this guide that the areas viable for an upgrade are the processor, RAM, hard drive and optical drive. Pentium M processors go up to 2.26Ghz, but for something that punchy you are looking at a fairly mammoth outlay – over £600. We'd suggest plumping for the more than capable 1.83GHz effort for around £220. A 40GB hard drive is pretty measly, so consider an 80GB one for around £67 and the near obligatory 1GB of RAM can be had for around £65, providing the most obvious performance boost to your kit. If you think you'll have use for a dual layer DVD writer, then we reckon £70 rather than £50 isn't too much to shell out. Choice is the name of the game, though, so decide in which areas you will require more poke and spend your hard earned dough there.

Don't waste all your money on a top CPU, a 1.9GHz unit will do…

The verdict
Is the DIY laptop route for everyone?

While we like the idea of hacking together our own laptop, we're not sure that it's the best option when you want a new notebook. For a start, with a bit of poking around, we came up with a similarly specced Dell 630m for £599, and if you're prepared to drop below than this spec, then you can get something at as low a price as £350, such as the Maxdata ECO4000A, again from eBuyer.

Crucially, at least as far as price comparisons are concerned, both of these prebuilt options come with Windows XP preinstalled, whereas the barebones kit does not. As Alec is quick to remind us, Windows is not the only option here – and a Linux installation would eliminate the cost of the OS from the equation – but for many, a Windows OS remains a necessity, and at £50, it's a financial hit to any prospective laptop builder.

Clearly the laptop we created was a relatively low spec concoction and, as a result, plays Canute to the tide of affordable laptops available online. The scenario where we see the barebones build coming into its own is one where you shop for performance parts, meaning the savings on each component are magnified.

The one thing that shouldn't stand in your way, though, is the construction process. It's really simple and, if you're good with a Philips head, can be completed in under 10 minutes. While the concept of a barebones notebook is in a fairly early stage, as kit prices drop and MXM establishes itself we see no reason why constructing your own tasty little laptop shouldn't become as advantageous as building over buying in the desktop market. **PCF**

	PCF's MSI 1022B	Dell 630m	Toshiba Satellite Pro M50
CPU	Pentium M 1.73GHz	Pentium M 1.73GHz	Celeron 1.4GHz
Graphics	Geforce 6200 Go	Intel integrated graphics	ATI XPRESS 200M
RAM	512MB	512MB	256MB (64MB shared with GPU)
HDD	40GB	40GB	40GB
Optical	DVD-RW	DVD+/-RW	DVD/CD-RW
Price	£691 (with XP)	£599	£469

Prepare to fight for your life in a
vast, evolving adventure,
complete with 'real' physics.

Dark Messiah
Might and Magic

Even as *Oblivion* slays the myth
that swords, sorcery and a first
person perspective don't mix,
there's a new champion galloping
on the horizon. Mike Channell
saddles up…

PCFormat is hiding. We're
hiding because there's a
cyclops the size of a bus
clomping around in front of us looking
miffed. There's also a rather puny
armoured chap charging towards the
behemoth waving his sword
frantically… this we *have* to see. After
barely a moment's ineffectual batting
at the creature's ankles, the brave
knight is plucked from terra firma and
treated to an inquisitive look from that
enormous eyeball. We can almost

hear the gears grinding inside the
hulking beast's skull as it turns to
face us. In an instant the knight's limp
body is hurled towards our cover,
scattering the barrels we are cowering
behind and causing considerable
damage. Let's just go over that again,
an enemy picked up another NPC and
used it as a weapon against us. We're
going to need a bigger sword…

This is *Dark Messiah*, the second
foray by the *Might and Magic* series
into the first-person world (*Legends*, a

The humans enjoy a geographical advantage on their home turf, but the fact that they are defending at all means they're in trouble.

The multiplayer assassin class should be enormous fun. Someone ought to tell him he came out in his pyjamas though.

CS clone released in 2001 was fairly dire). We first saw the game at the Leipzig Games Convention (*PCF180*) and were impressed by its interactive environs. This month we hopped on a plane to Lyon, home of Arkane Studios, to see how the game was coming along.

Dark Messiah casts you as the apprentice of a wizard, sent by your

Goblins and other assorted nasty adversaries with blissful impunity.

Arkane Studios clearly boasts a very ambitious team, one of the few to grapple with Valve's beloved Source engine and fully utilise the engine's physics code, so we decided to unsheathe our journalism stick and start prodding

"The coolest thing is that the in-game physics aren't optional. They will effect the way you play"

JULIEN ROBY Game Designer and Project Manager at Arkane

master to deliver an artifact to the Regent of Stonehelm. Unfortunately you arrive at the city on the brink of a fight between the Necromancers and the humans within the perimeter walls, a battle that is the incendiary for a much larger conflict. On top of that you have a demon swimming around in your guts, constantly attempting to coerce you into following the path she chooses. So there's plenty of motivation for smacking Orcs,

some developers for some insight. "At first we started with our own engine, our own lighting system, our own physics system, but we saw that it would be very difficult because we wanted a lot of physics in the fighting system to make it interesting and visceral," Julien Roby, game designer and project manager at Arkane, told us. "At the time the team at Valve was showcasing *Half-Life 2* at E3, so we got in touch with them, because

A CLASS ACT
All-out fantasy war is the name of the game in multiplayer

PCF was given a tantalising first glimpse of the multiplayer mode that will be bundled with Dark Messiah. Developed externally by Kuju, which deftly handled the netcode for console versions of Call of Duty, the network campaign takes place during the story mode's overarching conflict, but brings a class based structure to the skills made available in single player. The campaign takes place over five maps organised in a line – at one end you have the human stronghold and at the other the undead's lair, plus three territories in between. Play becomes a tug of war, with each team having a geographical advantage in their own territories and the middle map being entirely neutral. Experience points that can be spent on skills are also carried over between rounds ensuring momentum is maintained across the campaign. Both races have five distinct classes to choose from.

>> ASSASSIN
While they are weak in direct combat, Assassins will be able to hide amongst the shadows, move silently and, with enough skill points, eventually have the ability to become completely invisible.

>> WARRIOR
A master of mêlée combat, the Warriors on your team will be the keen fellows storming into the fray with a broadsword and shield, and hacking away like lunatics.

>> PRIEST/PRIESTESS
At first the Priests may appear somewhat on the wimpy side, but they will be able to identify disguised Assassins who have snuck behind your front line. They'll also deal damage via a selection of magical spells.

>> MAGE
If you see a fireball arcing across the battlefield, chances are it came from one of your plucky mages. These are the magical heavyweights of Dark Messiah's multiplayer and have a variety of ranged attacks.

>> ARCHER
With the ability to snipe from a distance using zoomed vision, the Archers will be able to cause massive amounts of damage to single targets. Get up close, though, and they'll go down like a sack of wet cabbage.

Foot in mouth

Forget bumping into chairs: *this* is how to use game physics

Dark Messiah may not take advantage of new physics card tech, but it does have a kick command which is just ace, and administers a swift boot to whatever is in front of you. That could be planks over a doorway, a barrel or an enemy's soft face-flesh. Best of all, kicking a bad guy doesn't just cause damage, but also forces him to stumble backwards, **meaning you can hoof Goblins into the racks of spikes that festoon a level, or 'assist' them into one of the chasms that seem to proliferate in Dark Messiah's world. This is, naturally, highly amusing. Of course, the kick can be more professionally executed as part of an attack chain, buying you the time to get in that critical heavy hit.**

Dark Messiah is positively riddled with the kind ugly, cretinous brutes that demand the attentions of your sword.
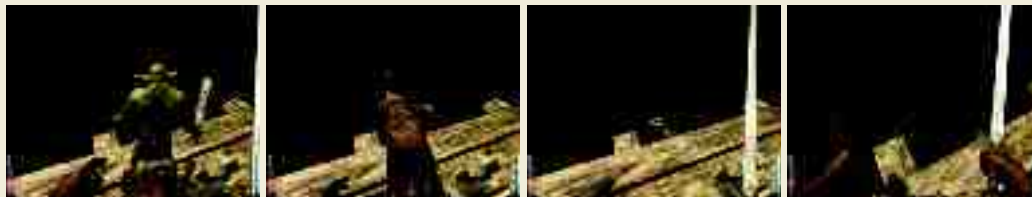
Raphael [Colantonio], the game's director, already knew some of the guys there. They liked our previous game, *Arx Fatalis*, and had given us some feedback on it. He got straight in contact and asked if they were looking to license the engine, and they said yes."

REACTION TIME

The benefits of Source are evident from the moment you step into *Dark Messiah*'s world – kick an enemy towards a boarded-up doorway, for example, and he'll clatter through the planks and land in a prone heap. But the team is adamant that this should stretch beyond sheer novelty, "The coolest thing is that the physics aren't optional," explains Roby. "In the first games with physics, there was just a pot on a table and if you go near it, it falls off, or you can pick it up. What we are trying to achieve is physics that are really implemented in the gameplay, so for instance in the combat you can take a barrel and throw it at someone, or break shelves and all the stuff will fall on the enemy." Now that the novelty of real in-game physics has worn off, this is a refreshing perspective for a Source licensee to take. But that doesn't mean there haven't been

was internally programmed just to force the NPCs to slide, but we realised if you put it in the right place, because the guy is falling in physics he would then fall off the cliff." This improvisational style is something Arkane wants to nurture in players, allowing them to discover logical applications of game physics

NPCs in a body of water and you cast the lightning at the water, they will be electrocuted."

WELL EXECUTED

One new element revealed to us during our visit to Arkane HQ was the fatalities. During the standard hacking and slashing, an adrenaline meter builds in the corner of the screen. When the bar is full, an instant kill can be pulled off using whatever weapon is to hand – in our case, plunging a sword into the meaty flesh of an Orc and then using a well-placed boot to dislodge the blade, sending said Orc to his slow-motion ragdoll doom. Fatalities vary from special area-specific attacks to more powerful versions of stock magic spells, depending on where your skills lie. With charged

> ## "Fantasy is having a rebirth – it's definitely more popular than it was five years ago"
>
> **ROMUALD CAPRON** Managing Director of Arkane

some amusing side effects to having a physically realised world. Much has been made of the in-game footage where a patch of ice is cast on the ground and an Orc slips off a precipice to his demise, but according to Roby it was a happy accident: "The patch of ice

by themselves: "One of the goals for the gameplay was to say that if the player thinks they can do something with the tools, then they should be able to do it. If something appears to be possible, it should be. For example with the lightning, if there are two or three

The freeze spell is visually stunning and allows you to shatter your foes with a well placed foot to the chops.

Zombies may be too moronic to use the environmental physics traps, but they are utterly relentless in their pursuit of you.

Despite appearances, this isn't actually a scene from *Extreme Medieval Plastic Surgery Live*.

Build up skills in the magical disciplines and you'll never need that microwave ever again.

And you thought catching your coat pocket on a door handle was irritating. Spare a thought for these wretches.

If you equip a rope arrow to your bow, you can scale walls and clamber up to distant ledges. Or kill Orcs with it.

up telekinesis, you can lift enemies up and launch them gravity gun-style into one of the many physics traps that litter the maps.

Another area which Arkane has taken meticulous care over is the AI. For a start, many of the enemies have an awareness of the environment around them and how best to damage your fragile body. On encountering the player, they go through a list of possible courses of action, settling on the easiest and fastest method of attack – whether that be straightforward running towards you with flailing limbs or hacking at the rope bridge you are standing on. One of the more impressive things we saw was that when you aim at an enemy, for example when drawing your bow, they actively attempt to move out of your line of fire – finally a game where enemies no longer steam towards you with a flagrant disregard for their imminent ventilation. This even stretches to leaning out of the way of oncoming fireballs. The various species also sit within a 'food chain', meaning that the player is not always the top priority in combat, and enemies will lay into each other with gusto, if left

to their own devices. Also, brilliantly, the list of options open to an enemy depends on its intelligence – you won't see an undead zombie rushing to topple a statue onto your head if you, say, interrupt him filling in his MENSA application form.

Everything we saw suggested *Dark Messiah* could be quite special. The world is beautifully realised, and the physics truly are an active part of the game, rather than a bolted-on curio. Thanks to an enthusiastic team and meticulous design, the game should offer

something dramatic and engaging to those traditionally turned off by a vanilla RPG structure. "Fantasy is having a rebirth thanks to *Lord of the Rings*," Romuald Capron, Arkane's managing director, asserts, "so it's definitely more trendy today than it was five years ago." Hopefully this means that, even in our spoilt, post-*Oblivion* world, there should still be room in gamers' hearts for *Dark Messiah*'s fantasy combat and 'real' physics too. **PCF**

ART OF THE CITY

Dark Messiah's visual style has taken its cues from history…

Genuine time and thought has gone into ensuring that *Dark Messiah*'s locales are convincing. For the human city of Stonehelm, Arkane has taken historical buildings as a starting point, but twisted them. Ubisoft's Guillaume De Butler revealed the thinking behind the designs, "If you want to have something original, something that lasts and will not go out of fashion, then you have to base yourself on reality and on existing things." Christophe Carrier, Arkane's lead level designer (above), agrees: "In Lyon we have a lot of old architecture and small medieval towns nearby. But this isn't medieval, this is fantasy." Of course, each race has its own unique style – the Goblins inhabit ruins, for example, whereas the Orcs construct rickety shacks and walkways that cling to the side of sheer cliff faces.

Despite spending most of their time battling evil necromancers, these diligent fellows still find time to keep their armour polished to a high sheen.

reviews

All the latest games, gear and apps

80

Ghost Recon: Advanced Warfighter

gold
PCFormat

high
score
PCFormat

top
gear
PCFormat

52

Ageia PhysX

Our scoring system

0-19% Unusable or astoundingly rubbish
20-49% Largely not worth spending money on
50-69% Some decent features but uninspiring
70-79% Accomplished without the must-have factor
80-89% Outstanding. Awarded Top Gear or High Score
90+ Exceptional. A *PCFormat* Gold Award winner

Our key promises

1. PCF has the most thorough reviews
We've been reviewing kit and games for 14 years. With over 8,500 reviews written, we have the most talented, dedicated and authoritative teams in the business.

2. Integrity is paramount
We never trade pages for exclusives, or review games not signed off as finished by the publisher. Where we've looked at reference hardware, we'll make that clear in the review.

3. The PCFormat Gold Award
Only when a piece of equipment or game exceeds our expectations in terms of innovation, excellence and value for money does it get one of these coveted honours.

4. High Score/Top Gear
It's a misconception that only 90%+ is an essential purchase. Anything scoring 80% or higher is festooned with one of these, making it one of the month's most highly recommended.

5. We want to know what you think
We are PC fans writing for PC fans, so please share your thoughts on new stuff in our forum: **http://forum.pcformat.co.uk**
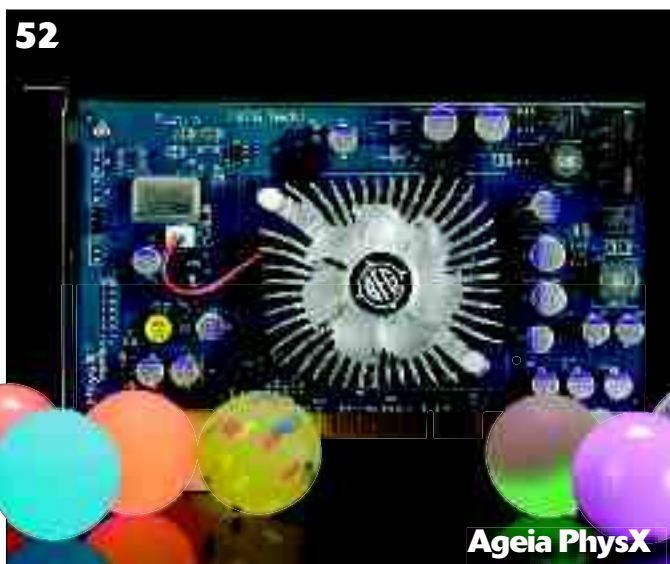
PCFormat Experts

KIERON GILLEN
Wannabe rocker KG has reappraised *Broken Sword 3* on page 140, in order to whet his appetite for its imminent sequel.

MOST WANTED
Broken Sword 4

JOHN WALKER
Brave John took to his sickbed this month, but he still managed to fight for a DRM-free future on your behalf.

MOST WANTED
Medicine

RICH COBBETT
Outlaw Rich sped through *Auto Assault* on p92 this month, leaving nothing but charred wreckage behind him.

MOST WANTED
More rockets

DAVE JAMES
After tackling *FIFA World Cup Germany 2006* even DJ failed to find a way to effectively deal with Ronaldinho's trickery.

MOST WANTED
Age of Pirates

JIM ROSSIGNOL
Our man of science got terribly excited about scramjet technology. London to Sydney in a few hours, you say? Cor.

MOST WANTED
Air miles

MIKE CHANNELL
MightySeven pushes his 1337 hacksaw skills to their very limits in the laptop building feature over on p38.

MOST WANTED
GTR2

94
Rise of Legends

70
Webcams

65
Sentia m3400

66
Exilim EX-Z850

THIS MONTH

» MP3 MOBILE PHONES
Sing when you're ringing
It used to be believed that all your entertainment needs would one day be catered for by a futuristic wristwatch. These days, however, it's your mobile phone that's vying for the title of media hub. Can the phones in our test though pursuade you to leave your iPod at home?

69
» PHOTO PRINTERS
Print isn't dead
We took one huge, expensive printer and one diminutive, 'value' printer, put them in a pit fight and stood back. Nothing happened, so we thought we'd just get them to print photos instead. Find out which was Mohammed Ali and which was Frank Bruno.
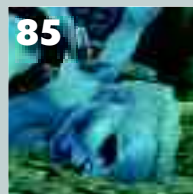
85
» ROGUE TROOPER
Blue is beautiful
2000AD enters the cloning debate in typically heavy-handed fashion with its gene-splicing, DNA-sharing future-shooter. With your dead buddies strapped to your gun, hat and backpack respectively you must take to the ravaged vistas of Nu Earth. Is that like Nu Metal; largely unpleasant, lazily titled and featuring far too much Fred Durst? Find out here.
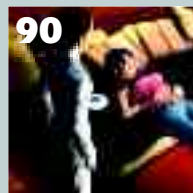
90
» DREAMFALL
A film you control? Aieee!
Interactive movies, eh? They were supposed to be the future of gaming – and they would have been, but they were rubbish. You just got hours of dodgy FMV footage loosely tacked onto an even dodgier game. *The Longest Journey* was the closest we've seen, combining a great story and hours of engaging cutscenes, and no FMV. Can the sequel, *Dreamfall*, match its heritage?

PLUS

Ageia PhysX processor

Kiss goodbye to physics-free fragging. Ageia's new physics processor promises a new world of gaming interactivity, says Jeremy Laird.

Price £215 **Manufacturer** BFG **Web** www.bfgtech.com

Make a note in your diaries, folks. And preserve this issue of *PCFormat* for posterity. May 18th 2006 will go down in history as a turning point in the history of PC gaming. Hell, it's going to go down in history as a turning point for computer gaming, full stop. Ageia's fancy new physics accelerator chip is nothing less than the most exciting event since the launch of 3DFX's Voodoo graphics chip back in 1996. It threatens to comprehensively torch the dusty and genre-ridden rulebook of PC game design. Therefore, clichés at the ready, prepare yourself to think big, think outside the box and think clear blue sky. Because that's exactly what the Ageia PhysX board is going to force games developers to do.

Or at least that's what we're hoping, here at *PCFormat*. The reality, as ever, is just a little more complicated. Until this month, the very idea of hardware physics simulation and acceleration for the PC was cloaked in a Rumsfeldian weave of known unknowns and unknown unknowns, with nary a known known in sight. Exactly how will the arrival of more realistic physics simulation revolutionise gameplay? How will the PhysX chip stack up against the potential competition from ATI and NVIDIA, both of whom appear to be shaping up with their own GPU-accelerated take on PC physics acceleration? In the coming age of multi-core CPUs, do you really need a dedicated physics chip? And in the current environment of quad GPUs and dual-core processors, is it even sensible or responsible to plug in yet another expensive, power guzzling and heat-spewing computer chip to steam up the inside of your PC?

INTO THE UNKNOWN

Well, *PCF* has secured world exclusive early access to a BFG-branded PhysX card, so we've seen exactly what it's capable of. We've secured some quality one-on-one transatlantic airtime with Ageia's CEO, Manju Hegde (hop on over to the *PCF* blog for our full account of his vision for the future of PC physics). And we can begin to answer some of those questions.

The basic argument for the introduction of a dedicated physics chip, of course, is easy enough to compute. Over the past decade, the real-time 3D rendering capability of the PC has seen explosive growth. And that's meant physics simulation has fallen woefully behind. Compared to the staggering visual fidelity of current game engines, their physical properties are hollow, unconvincing and downright uninvolving. Ageia is here to redress the balance, to ensure, at last, that the quality of in-game physics is consistent with that of graphics.

If that's the big idea, Ageia's real-world tool is the PhysX card itself. PhysX has been designed from the ground up for one purpose only: accelerating physics. In theory, it's capable of accelerating and simulating literally any kind of material or physical interaction. That's everything from particles, fluids, cloth, and rigid and soft bodies to fluid, mechanical and ballistic dynamics. Forget the old

HOW WE TESTED
Reviewing the future of games

When it comes to hardware reviews, it doesn't get any trickier than this. The first example of a new category of PC component. Needless to say, it's early days for the world's first physics accelerator chip and the range of available supporting software is limited. But the good news is that we were able to assess the two most significant titles in the PhysX-compatible launch portfolio. *GR:AW* combines both software-rendered and PhysX-accelerated codepaths, the latter boasting additional physics simulation detail including fully interactive debris and a massively increased explosion particle count. *Cell Factor*, by contrast, is the full PhysX Monty. The entire gameplay experience relies on the increased physics capabilities of Ageia's new chip. Superficially, it's a common or garden multiplayer FPS. But the quantity of objects tearing across the screen adds new depth to PC gaming.

"PhysX threatens to comprehensively torch the dusty and genre-ridden rule-book of game design"

◣ model of indestructible walls, dead environments, the odd token object to manipulate and ghastly animated sprites. In Ageia's brave new world of full physics simulation, everything reacts realistically, behaves convincingly or can be destroyed in a satisfying fashion.

SO, HOW DOES IT WORK?

In simple terms, that brief has spawned a chip packed with a massively parallel array of floating point units, backed up by a dash of integer data handling. Although Ageia is pitching the chip as a multi-core architecture, that's probably more a function of current fashion than the silicon reality. Whatever, the company is keeping a lid on the architectural details, for now. It won't come clean with the number of floating

"Legacy titles like Half-Life 2 will be incompatible with the new hardware"

point units, for instance.

However, a slew of performance numbers have been released, including the capability to handle 20 billion instructions per second, 530 million sphere-to-sphere collisions and tens of thousands of discreet particles. But the key specification is an internal memory bandwidth rating of 2TB per second. That's crucial for allowing the resolution of vast numbers of interdependent interactions that are part of a detailed physics simulation. Imagine an explosion with thousands of objects interacting with each other, in which each object influences the

Thanks to Overclockers. co.uk for supplying us with the very first Ageia PhysX board in the UK.

The future of PhysX
So far, so good

Get ready for a change in the way you play games. This first PhysX chip is just the beginning. Ageia has a roadmap full of future physics chips. The company is already in talks with partners regarding both motherboards with integrated PhysX chips and mobile variants for laptops. Intriguingly, Ageia has also hinted that the chip can be used to accelerate two non-physics consumer-level PC applications, but won't say exactly what, for now at least. Who knows what use the company will find for all that floating point power?

In the mean time, Ageia is happy to liken the launch of the PhysX chip to that of 3DFX's first 3D processor back in 1996. But 10 years on, and with both the PC market and chip manufacturing technology much more mature, the development of hardware physics processors could be even more explosive than the early history of graphics chips. Food for thought…

trajectory of every other object, and you'll get an idea of the huge amount of data that must be shunted around.

And that's what really separates PhysX from the other massively parallel chip in your PC, the GPU. Although modern GPUs pack a huge amount of floating point power in their pixel shader units, graphics architectures simply aren't designed to cope with interdependencies of that kind. They lack both the internal bandwidth and the read-write-modify capabilities to execute such workloads efficiently. And that's quite apart from the fact that games such as *F.E.A.R.* and *Elder Scrolls IV: Oblivion* already give GPUs a torrid spanking. There simply isn't any processing power to spare.

But what about the new generation of multi-core CPUs? Surely, the arrival of quad-core CPUs early next year will make a dedicated physics processor entirely redundant? Ageia's argument, and one that we largely go along with,

is that physics processing is a lot like graphics processing in one regard – you get far better results from a dedicated chip. A quad-core CPU wouldn't worry even the lowliest graphics chip for 3D rendering ability. And so it is for physics simulation. Ageia's chip will beat anything a CPU can do with an exceedingly large stick.

THE DEVIL'S IN THE DETAILS

So, it all comes down to fidelity. Just how detailed do you want your physics engine to be and are you willing to require the use of a dedicated chip to accelerate it? Already, more than 30 games have been announced that either support or require the presence of the PhysX board for physics acceleration. With triple-A titles including *UT2007* and *Ghost Recon: Advanced Warfighter* in the list, there's no question developers are taking Ageia's new baby seriously. Indeed, Ageia is making it as easy as possible

The PhysX experience
More screens from our hands-on test at blog.pcformat.co.uk

So, this is it. Our first experience of hardware physics. Of this debut PhysX-compatible pairing, *Cell Factor* is easily the more spectacular. The quantity of objects that can be manipulated is unlike anything you've ever experienced. *Cell Factor*'s novel use of physics for gameplay (crushing opponents with flying objects is by far the most effective way of scoring a kill) makes every other PC game look static.

Ghost Recon: Advanced Warfighter is more measured. A smattering of extra debris here and the odd particle effect there is often the size of it. What's more, from close quarters, the PhsyX extras look clunky. It may not be the pervasive, all encompassing experience that Ageia is promising, but it really is a tantalising glimpse of how detailed physics modelling can breathe life and vitality into a 3D game environment.

Without PhysX
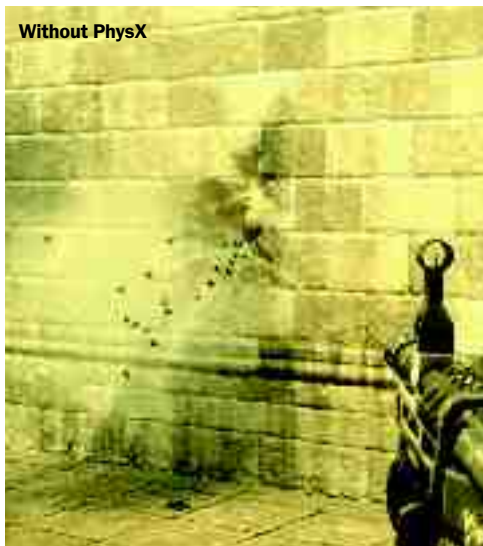
With PhysX
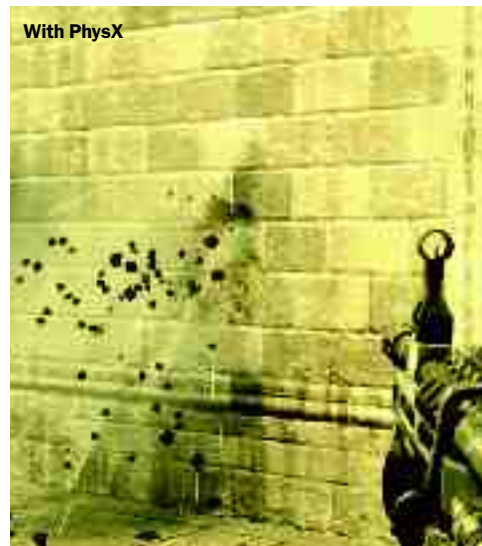
UP CLOSE PhysX lesson

BFG takes a bet
Just like a graphics card, the chipset is supplied by Ageia to be integrated onto a PCB by a so-called add-in board partner, with BFG being first to take the plunge.

Floating point fun
A massively parallel array of floating point units, backed up by a dash of integer data handling and capable of handling 20 billion instructions per second, 530 million sphere-to-sphere collisions and tens of thousands of discreet particles. That's Ageia's PhysX chip for you.

Familiar friend?
The first PhysX boards are old-school PCI cards that resemble an entry-level graphics adapter complete with an actively cooled logic processor mounted centrally and surrounded by 128MB of GDDR3 graphics memory.

Bandwidth beast
The key to PhysX's CPU humbling performance is an internal memory bandwidth rating of 2TB per second. With mind-boggling numbers of interdependent physics computations being crunched, shunting data around the chip is a top priority.

for developers to jump on board the PhysX train courtesy of a no-fee arrangement for use of Ageia's physics engine and tools, compared to a rumoured $250,000 license fee for arch-rival Havok. Significantly, the engine supports a software-based CPU rendering mode, allowing developers a fall back option and reflecting the fact that the installed base of PhysX boards is currently zero.

However, it is worth noting that, for now, the PhysX chip is closed shop. Game engines need to be specifically coded to run on the PhysX chip. There's no question of unmodified legacy titles with significant levels of physics simulation, such as *Half-Life 2*, using the new hardware.

The pair of launch titles we've sampled neatly capture the two options game developers have for incorporating PhysX into their engines. *Ghost Recon: Advanced Warfighter* takes the modular approach by making hardware physics acceleration an optional extra that provides added realism, while *Cell Factor* from Immersion Games is the full-on showbiz physics spectacular which requires the presence of a PhysX board. Take a peek at the boxout on the preceding page for our impressions of these first physics-accelerated titles. But suffice to say that together,

those games provide a tantalising glimpse of a more interactive future for PC gaming.

THE VERDICT

As for the performance of the PhysX chip itself, the jury will remain out for some time to come. For starters, since this is the first hardware physics accelerator in history, there are no frames of reference, no competing chips to compare it with. Moreover, currently it's not possible to run *Cell Factor* without a PhysX card present. Hence, there's no way of comparing performance with and without hardware acceleration. And Ageia itself concedes that the chip is only lightly loaded in *Ghost Recon*.

What's more, the addition of yet another hig- powered processor generating more objects to render also makes it extremely difficult to pinpoint performance bottlenecks. At around 35 to 45 frames per second, we found performance in *Cell Factor*, for instance, to be lower than you'd expect for a fast paced shooter, even at minimal image quality settings and supported by a fast CPU and high end video card. At this early stage, it's awfully tough to say whether that reflects GPU, CPU or physics processing limitations, or just a poorly optimised game engine. The fact, however, that framerates remain more or less consistent, even

when all hell is breaking loose onscreen certainly inspires confidence in Ageia's new hardware.

Still, you'll forgive us if we sidestep that judgement call on just how good or essential this first physics chip is, until the arrival of the title that proves physics really is the future of gaming. In the mean time, the chip works, supporting software is here and the potential benefits are clear to see. We're hopeful that the PhysX chip will be the catalyst for a new generation of spectacular games. As Ageia's head honcho Manju Hedge says, "physics simulation is only going to get better. Once the best creative minds in the industry apply themselves to our technology you'd better watch out." **PCF**

top gear PCFormat

If you had one of these cards, you'd cackle insanely too.

Processor Type	AGEIA™ PhysX™
Bus technology	32-bit PCI 3.0 Interface
Memory interface	128-bit GDDR3
Memory capacity	128MB
Memory bandwidth	12Gbytes/sec.
Effective memory speed	733MHz
Peak instructions	20 billion Instructions/sec
Sphere-sphere collisions/sec	530 million max
Process technology	0.13 micron
Transistor count	125 Million

85% **PCF says...** "It works. We're intrigued. Let the festival of physics begin."

Musical Mobiles

Splicing your phone with an MP3 player means one less device to carry about. Tom Dennis picks five of the best

Back in early March, mobile operator 3 announced it had just sold its millionth audio download via a mobile phone. Small beans, you might think, compared to the mighty Apple's billionth iTunes song a month earlier. But it was an announcement indicative of just how comfortable we've become with music on our mobiles.

Putting media capabilities into a mobile phone has always been a no-brainer. The success of 3 – which, along with Vodafone and Orange, now supplies download data that counts towards the Official UK Chart – is testament to this. And with the growing popularity of portable media players and the leap in flash memory capabilities, the world of convergence has really opened up to handset manufacturers.

However, striking the balance between a competent entertainment device and a multi-function mobile phone has always been difficult. Too much feature-fun makes a handset dangerously coy and undermines any serious applications it might be perfectly capable of handling. On the other hand, an overly sombre design lacks the essential fun factor that helps to shift any desireable new phone off the high street shelves.

Always the first to get in the game, Apple licensed iTunes to Motorola last year, and heralded the announcement with the release of the Motorola ROKR. Sadly, it was an utterly damp squib, with its limited take on iTunes spoiled by slack usability and oafish looks. Needless to say, the ROKR didn't sell, testament to the notion that Apple's window-dressing alone isn't enough to make a phone desirable. First and foremost, people still want a phone to be a phone.

The real balance, then, is less Swiss Army knife and more target-specific. The MP3-savvy don't want a phone that wastes space and power on Excel and Outlook support. So while PDAs remain the only truly multi-functional portable devices out there, a mobile handset needs to specialise. And with today's mobiles, if it's MP3s at the touch of a button, you want, that's exactly what you can get.

SPEEDY DOWNLOADS

But pushing buttons is the easy part, and until downloads over mobile networks become as fast as a typical internet connection, your mobile is always going to go wanting. The promise of 3G was meant to solve this, but we're at least a year or two away from the next generation's true potential. While the initial wave of third generation handsets is beginning to penetrate the UK market, 3G still has a lot to live up to.

In the meantime, the success of MP3 and multimedia-capable phones will rest in the hands of the manufacturers. We all want full accessibility without complications and hassle; to be able to select a particular album or track without having to unlock or even reach for the handset. When manufacturers strike the balance between phone and media centre – and manage so without the clunky operation of the typical PDA – we could soon have some true convergence devices at our fingertips.

There's an distinction to make when evaluating something which can be so personal to people. After all, some consider what phone they carry to be as bigger statement about themselves as what car they drive. So it's worthwhile pointing out that while we look for a practical interface, ample memory and wide format support, it's not always these factors that are the most important to the end user.

Even the best-looking phone won't sell if it's a complete dud in the technology department. To this end, we set our collection of handsets some simple tasks. Battery life was evaluated by leaving one single track on repeat play (where possible) after a full charge. Memory capacity was checked by seeing how many tracks from a 1,000 song playlist were transferred before the memory filled up. And transfer rates were timed by seeing how long it took for the 12 tracks on the Yeah Yeah Yeahs' new album to be shifted from a home desktop to the handset. Overall though, we'll be looking at each phone's capability as an MP3 player and seeing whether you should be looking to flog the iPod.

gold
PCFormat

Samsung SGH-i300
£0 to £300

92%

Manufacturer Samsung **Web** www.samsung.co.uk

As far as designing an iPod-killing phone goes, the i300's spec list comes pretty darn close. It's the first Samsung launch with an integral hard disk, enabling a massive 3GB of storage within its hefty casing. But size isn't always everything. And when twinned with the idea that the i300 is actually Samsung's first all-conquering smartphone, means media capabilities might take a back seat to seamless *Outlook* synchronisation or video conferencing features.

Thankfully though, this smartphone operates on Windows Mobile, granting it use of Windows Media Player. MP3, AAC, AAC+ and WMA are all supported. Again thanks to Windows Mobile, transferring albums and even playlists between a PC and the handset is an absolute whiz.

But it is the quality of the sound and the way in which you access it that really shifts the i300 a notch higher than its contemporaries. While the 3GB memory offers as much storage as a Nano, the i300's sound matches any dedicated PMP's offering beat for beat. Twin stereo speakers, 3D surround sound, a stereo Bluetooth headset option, a digital power amp and a comprehensive graphic equaliser show the i300 takes its music as seriously as any musty record shop owner. What's more, the iPod-mimicking thumbwheel means all of these sumptuous offerings are never more than a few finger flicks away.

The i300 may well house a perfect variety of MP3-aimed offerings, but it does so in sleek and useable handset. It's a great phone in its own right, but as an MP3 player, it rocks with the best of them.

Sony Ericsson w550i
£0 to £200
Manufacturer Sony **Web** www.sony-ericsson.com

67[%]

The w550i borrows heavily from last year's S700i swivel-action design. Like the rest of the current Sony Ericsson range, its vaguely puckish look masks a caché of grown-up features.

While it might appear stumpy and awkward, the front mounted thumb pad and media access buttons mean music, games and a quick-glance menu are all instantly accessible. As is to be expected from a handset carrying the Walkman badge, the digital media player and FM radio are first class and sound easily as good as any dedicated PMPs.

Considering it's one of the cheaper phones in this test, the w550i seems to suffer from an identity crisis. It's a dedicated MP3 phone, with great sound, but it devotes a little too much to gaming side of things.

But that's not to undermine the w550i's quality as a phone. Sure, it's hell bent on entertaining you, and it still fulfils its phone duties with aplomb, but we wish just a little more emphasis was placed on the MP3 side of things. Evidence of this is the limited memory on offer. An internal 256MB capacity is fine for everyday use, but as an out-an-out MP3 enabled phone, the lack of upgradeability docks some significant marks. Thankfully, the accompanying software makes files transfer a quick and painless process, though you're going to be doing this far more frequently than you'd like.

Motorola SLVR L7
£0 to £280
Manufacturer Motorola **Web** www.motorola.com

72[%]

After the relatively disappointing sales of the ROKR, Motorola seems to be unsure how to pitch its successor. The ROKR was an out-and-out MP3 phone, designed to bridge the gap between iPod and mobile. Yet it failed because of a bulky and ugly shell and frustrating connectivity issues.

With the SLVR, it seems Motorola has listened to half the advice gleaned from the ROKR lesson. Let's be honest here, the SLVR is gorgeous. Where the ROKR suffered from bulk, the SLVR ripples like a bantam-weight fighter.

Less than a 12mm wedge of polished aluminium houses a large 262,000 colour screen, 4x digital zoom VGA camera, Bluetooth, USB and upgradeable 5MB Transflash memory card.

The initial popularity of the ROKR also taught Motorola that consumers liked using iTunes on a mobile. Sadly, it's lacking here, though available as standard with the US release. This is a massive oversight from Motorola, which has here supplied a perfectly capable Media Centre in the SLVR, but hasn't supported it as well as the ROKR did. And while MP3 and AAC are supported, actually getting the tracks onto the phone is either handled through the straining Bluetooth connection, or via the troubled Sync software. Needless to say, a drag and drop offering could have been a life saver.

Motorola seems to have swung its design pendulum from one extreme to the other. Don't doubt it, the SLVR is a magnificent phone, capable of all you could ever want in a piece of design genius. Yet as an out-and-out MP3 player it lacks the format support and high capacity that would guarantee a high score.

Sony Ericsson W900i
£0 to £550

Manufacturer Sony **Web** www.sony-ericsson.com

88%

Having taken the bold step to dedicate an entire range to MP3, last year's W800i simply evolved a workable music option into Sony Ericsson's existing design framework

The W900i, then, is Sony's all singing-all-dancing 3G offering. A two megapixel camera with 8x digital zoom, Bluetooth, USB support and a bright 240x320 screen that proves it doesn't scrimp on the goods elsewhere. All of which you'd expect, but it's the Walkman features that truly impress.

Stocking a 470MB Memory Stick Duo, the W900i has ample capacity to work with, and is upgradeable to 2GB should you really want to trade-in the iPod. Both MP3 and AAC are supported within the Media Player, which itself is a sensible and easy to navigate interface. Playlist creation is a bit of a fiddle, but the W900i's thumb-driven keypad makes the labour much swifter and the FM radio support via the hands-free kit is one of the most complete and workable offerings we've seen on a phone.

The W900i is a phone first and foremost, yet makes the audio side of things a joy with some clever and subtle twists. Sure, it's bulky, but subtle with it and no great strain to use. Nor do you have to toil with micro-joystick, since the central control button is a breeze to work. A little more MP3 player than a phone perhaps? Not on your nelly. The W900i has it covered.

Nokia N70
£0 to £249

Manufacturer Nokia **Web** www.nokia.com

80%

As a fully charged 3G flagship phone, the N70 has so far proven vastly popular with the masses. With video calling, two megapixel camera, video or music streaming and bright 262,000 colour display, the N70 competes as a true multi-function, multimedia phone. There's no doubt, then, that the N70 is one of the highest spec 3G phones on release.

Yet for all of its features it remains instantly useable – something Nokia has always kept in mind while hunched over the drawing board. Physically, it's recognisably Nokia's baby, with a conventional boxy shape, five-way scrolling keypad, a media-launch key and an attractively sleek finish.

The RealPlayer media player supports MP3, AAC, Real Audio and WAV files, and delivers them in a punchy, clear and unfussy manner. The Visual Radio feature blends the analogue and digital realms nicely, allowing you to read up on artist and song information from any FM station you might be listening to.

As an MP3 device, the N70 is a little limited on the capacity side. A 30MB MMC card isn't exactly generous from Nokia, and it's upgradeable to 1GB which is only enough for around 150 tracks. Transferring data to the the N70 is a simple affair, though, and can be achieved via either a supplied USB lead or a Bluetooth connection, and for sheer convenience, we opted for the latter. The results were impressively swift, with a 4MB MP3 file making the trip from PC to phone in under 20 seconds.

MP3 support is just one string to the N70's mighty bow, and though it lacks the memory and ease of use of some of its rivals, it still delivers in absolute spades all-round.

Conclusion
Which handset is music to your ears?

If the ROKR taught us anything, it's that the ability to play music isn't a strong enough selling point in itself. The only way people will depend exclusively on their phones for their entertainment needs is if phones parallel the ease and appeal of their existing media players.

To some extent, the w550i exemplifies this ideal. It's a great phone, and a worthy option for those who want hours of music at their fingertips, rather than days. But it lacks the simplicity that makes other MP3 players so accessible.

At the other end of the spectrum is the N70. A superb radio concept makes it good for music, but it's a phone first and an MP3 player second – proven by the inclusion of the dreaded *RealPlayer*.

In terms of shear desirability, the SLVR is king. With ample memory

"The i300 could certainly replace your MP3 player"

potential and a solid Media Centre, the SLVR packs a lot into its slim figure. But as an MP3 player it lacks that usability factor, and we can't ever imagine it taking over as your outright MP3 player.

That leaves the w900i and the i300 to duke it out for top honours. While the former model is without doubt a fantastic MP3 phone – and certainly for the price can't come more highly recommended – it's the i300 that takes the gold. Here is a phone that could quite certainly replace your MP3 player. Not just in the capacity and functionality stakes, but in the way it handles and shapes the music, resulting in a sound quality that betters much of what's available from dedicated MP3 players. The only hurdle left for true convergence is battery life – not one of these phones can compete on that front yet. **PCF**

Mobile disco
Are you ready for the delights of 4G?

If you truly want to have a peak at the advancing trends in mobile communication, it's worth keeping an eye on the Far East. Already well into its third generation of mobile tech, Korea is now pushing all-out for conversion to a fourth generation. 4G will build on the already widespread W-CDMA standard that was implemented in this country to support the 3G and Wi-Fi rollout.

In theory, 4G technology will allow high quality video transmissions and full albums to be downloaded at speeds of up to 20 megabits per second – that's about 20 to 30 times faster than standard ADSL lines can manage. In terms of connection speeds, 4G promises to be about 20 times faster than existing 2G transfer rates and around 10 times faster than current 3G mobile broadband. It seems the industry has realised that simplicity and widespread

availability beat volume of content hands down.

The fallout for the comms industry is huge. 4G is expected to be a $400 billion global market by 2008. That's about the same as the existing mobile phone and music markets combined. The big players will be those who can deliver the broadest content – no one minds paying extra for Sky TV when you get all your channels in one place, and the same will be said for mobile entertainment. Find yourself on a boring train journey? Simply whip out your mobile, browse for a particular film or TV show, download it from your service provider and it'll be tagged on to your monthly bill.

There's no doubt that if the complexities of the ongoing DRM debate are finally sorted out, and consumers get used to the idea of paying a small amount for the usage of a media file, 4G could become a worldwide standard.

IN DETAIL The final analysis…

	£200 Sony Ericsson w550i	**£250** Nokia N70	**£280** Motorola SLVR L7	**£280** Samsung SGH i300	**£550** Sony Ericsson w900i
	67%	80%	72%	92%	88%
WEIGHT	120g	126g	96g	121g (without extra battery pack)	148g
SIZE	93x47x23mm	108.8x53x22mm	114x49x12mm	113x48x20mm	109x24x49mm
SCREEN	176x220 TFT colour	176x208 TFT colour	176x220 pixels	320x240 TFT colour	240x320 TFT colour
CONNECTIVITY	USB, GPRS, Infra Red	USB, Bluetooth, GPRS, IR	Bluetooth, USB, SyncML	Bluetooth, USB, IR	USB, GPRS, IR, UMTS
CAMERA	Yes	Yes	Yes	Yes	Yes
MEDIA PLAYER SUPPORT	MP3, AAC	MP3, AAC, RealAudio, WAV	MP3 / AAC	MP3, AAC, AAC+, WMA, ASF, WAV, WMV	MP3, AAC
MEMORY	256MB Memory Stick	30 MBplus expandable 64MB MMC card	5 MB plus Transflash 256MB memory card (up to 512 Mbytes)	64 MB MicroSD plus 3GB hard disk	470 MB Memory Stick upgradeabe to 2GB
NUMBER OF SONGS	71	22	105	700	112 songs
3G	No	Yes	No	No	Yes
DATA TRANSFER RATE	17 seconds	20 seconds	10 seconds	14 seconds	15 seconds
BATTERY LIFE	4.2 hours repeated play	3.5 hours repeated play	3.1 hours repeated play	2.1 hours (without extra battery pack)	3.7 hours repeated play
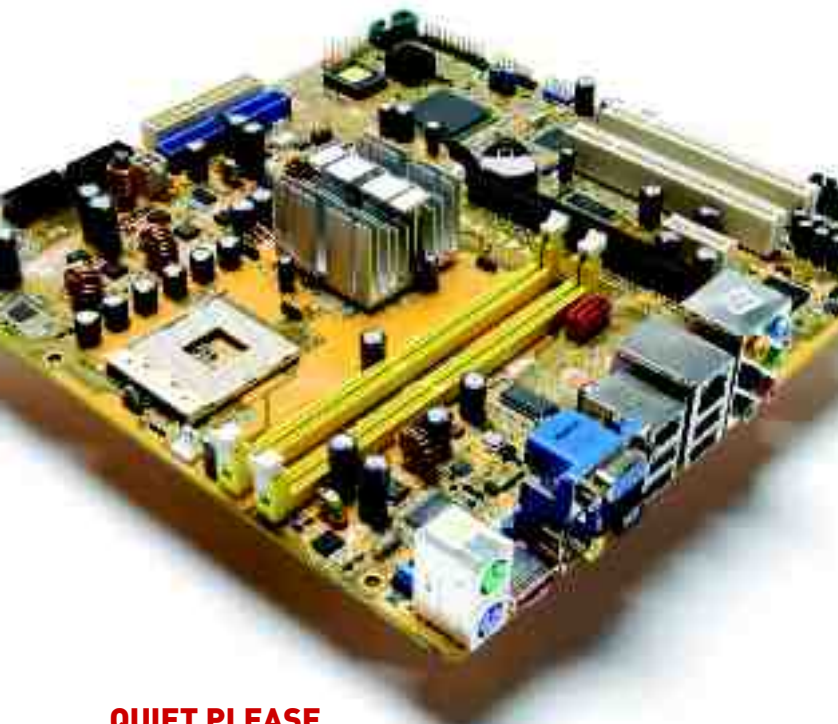
QUIET PLEASE

Asus N4L-VM DH

Behold: the easiest way of a building a powerful, near-silent system

Price £110 **Manufacturer** Asus **Web** uk.asus.com

Viiv is little more than a badge that purports to offer instant power-on in Windows MCE setups. Viiv 1.5, due out later this year, will add a whole host of goodies on the software side of things, but we'll hold off on getting excited about that until it launches.

The one good thing about Viiv is that it has ushered in a shift by Intel to promote Core Duo for desktops, and that cool running, powerful processor is exactly what makes this mobo worth a look.

You can plug a Core Duo or Core Solo CPU into this board, along with up to 2GB of DDR2 667 RAM. A quiet active cooler is included in the box, although you might want to experiment with apassive sink for these low-wattage chips. Everything else you need, apart from storage, is integrated – graphics, Dolby-badged eight-channel audio, Gigabit ethernet and Firewire.

The integrated Intel GMA 950 2D graphics subsystem is perfectly adequate, although the lack of a DVI or UDMI output is limiting. You can upgrade this using the PCI Express x16 slot of course – worth it if you want to play any of the more taxing games.

This is an Intel chipset, so you only get a single IDE interface, but there are a pair of SATA connectors for RAID 0/1 setups. An additional JMicron controller powers a third internal port and the external connector – currently a niche area, but one that could take off.

PIXEL PUSHING

Core Duo is the basis of Intel's new chips, so in many respects this is a glimpse of the future. It's quiet, and the performance is stunning (the machine managed an FX-60 challenging score of 255 in *SYSmark 2004*). As a motherboard right now though, there isn't an awful lot to get excited about here. It works and is flexible, but hardcore gamers are better off waiting for Conroe to appear after the Summer. **Alan Dexter**

CPU	Support Socket 479 Core Duo/Solo
Chipset	Intel 945GM
FSB	667/533MHz
Memory	2x DDR2 667/533MHz (2GB Max)
Graphics	Integrated GMA 950
Expansion	1 x PCI Express x16, 1 x PCI Express x1, 2 x PCI
Storage	1 x UDMA 100, 3 x SATA, 1 x SATA External
Audio	Realtek ALC882M 8-channel
Ports	8x USB 2.0, 1x IEEE1394a, Gigabit Ethernet, 2x PS/2, VGA
Form factor	Micro ATX

72% **PCF says...** "A decent base for a cutting-edge media centre system."

My Book Essential Edition

It may be unique, it may be chic, but you'll forgive us if we don't freak…

Price £125 **Manufacturer** Western Digital   **Web** www.westerndigital.com

You'd be forgiven for thinking this external hard drive is the illegitimate progeny of an Xbox and a copy of Tolstoy's *War and Peace* – it's bulky, has a green, backlit button and is encased in that perennial favourite, matte black plastic. The Western Digital My Book's party piece is that it's designed to be stacked horizontally on a bookshelf, meaning this is clearly aimed at a well-ventilated home office rather than the muggy depths of *PCFormat*'s rucksack.

First impressions aren't great, unfortunately. As soon as we slid the unit out of the box, we realised that for all its style-conscious aspirations, the case is tacky and insubstantial. It feels like if you just squeezed the My Book a little too hard, the case would crack.

POWER STRUGGLE

But surely the big green button must do something special? Well, no, actually, it's just a power switch. And where some Western Digital drives are equipped with 'Safe Shutdown', to ensure that all transfers are completed before powering down, such luxury is reserved only for the 'Premium edition' of the My Book. This 'Essential' version just switches off, borking any file-transfer in progress at the time.

On the plus side, at least the drive enjoys booting up as swiftly as it likes shutting down, and transfer speeds are peachy over the USB 2.0 connection.

We can see where Western Digital was going with the My Book. It intended the unit to be powered up once and plugged into a laptop that's been carted to and from work. In this capacity, very few of its flaws are even apparent, let alone relevant. From a distance, the drive looks quite smart and is wholly unobtrusive, the power button is not an issue if the drive is constantly on, and as for portability? Well, that was clearly never the intention anyway. The final bonus is that the drive is available for around £125 online, definitely at the lower end of the price bracket for 320GB external drives. With all this taken into consideration, and, crucially, assuming you don't wish to move it around, the My Book begins to look like a favourable option for those who'd like a neat and tidy external data-storage device for their home office.   **Mike Channell**

Drive Speed	7,200rpm
Buffer	8MB
Interface	USB 2.0
Capacity	320GB
Dimensions	57x170x171mm
Weight	1.32kg

78% **PCF says...** "A good effort, but not quite as solid as we'd like."
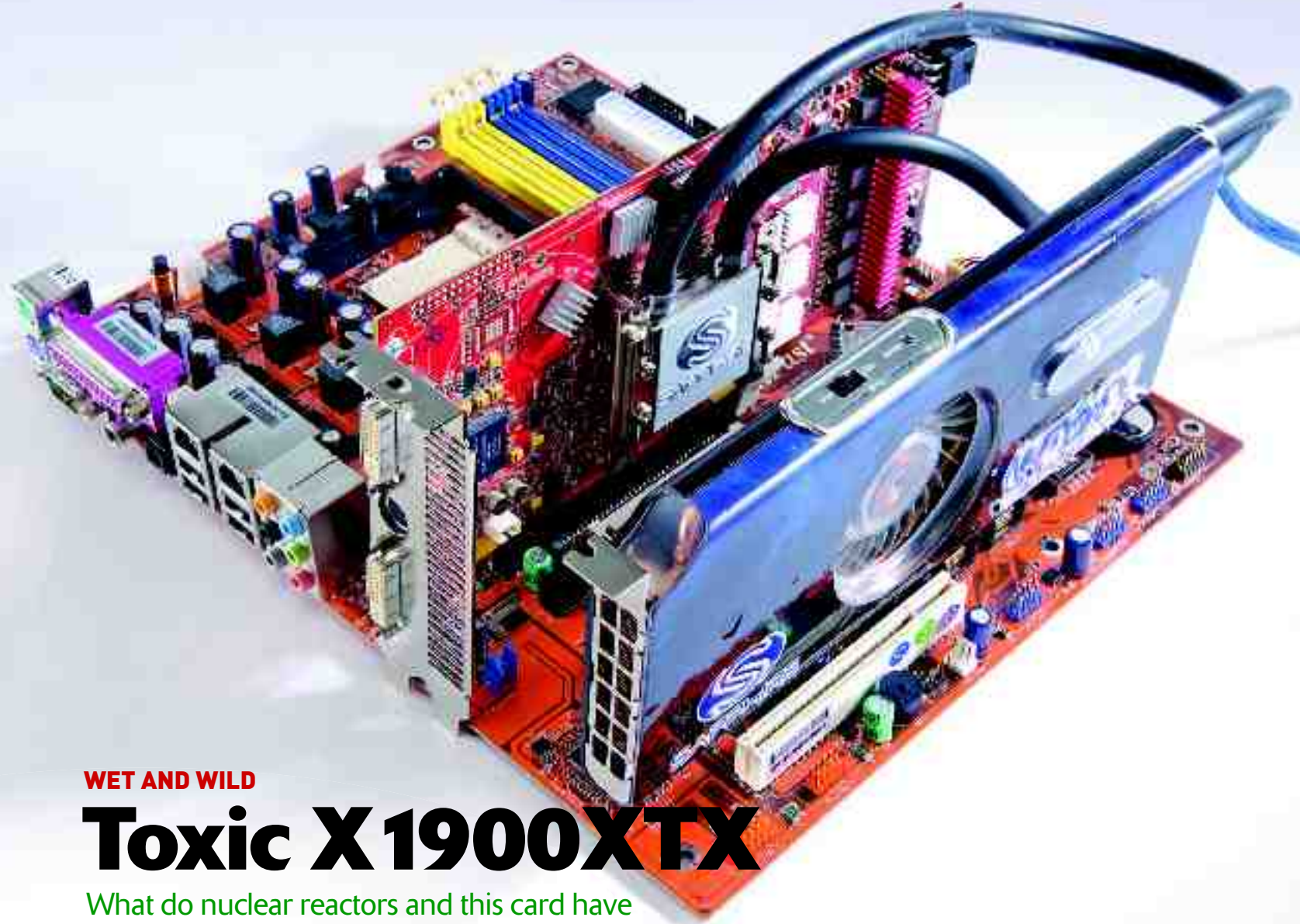
Toxic X1900XTX

What do nuclear reactors and this card have in common? No fission for hints, now…

Price £450 **Manufacturer** Sapphire **web** www.saphhiretech.com

Modding used to be a niche activity; a bit dangerous; a bit 'specialist' and edgy. How times have changed. Nowadays, you don't need a soldering iron and a Bible; all you need's a credit card and the ability to choose the best pre-packaged bits to plug together. The pain and risk has been removed from the process of making our PCs look good while offering sterling performance and reliability.

And so we come to Sapphire's latest take on the X1900XTX. Already the most powerful single card in existence, this model promises superior overclocking headroom and reduced noise, owing to its unique cooling system. It's a 3D card with an attached Thermaltake Blizzard water-cooling unit. The cooler, which is slightly smaller than a standard VGA card, sits in a free PCI slot, and comprises pump, radiator and fan, all powered with a spare molex. Cooled liquid is then passed to the water block on the GPU, which in turn is powered by a standard six-pin plug, just like any other PCI-E graphics card. In addition, the cooler unit has two fan-speed setting – quiet and silent, basically. And even on quiet mode, you can barely hear it in a standard chassis. It's a definitely a neat wodge of kit, and one to really break the ice at (LAN) parties.

SILENT TREATMENT

The result of all this is a card which runs far quieter than a standard X1900XTX. And cooler, too – idling, it sits around the 44°C mark, rising to 65°C during games, using the quiet fan-speed setting. Compare this with a vanilla X1900XTX, which idles at the same, around 44°C, but at full throttle hits the 95'C mark, accompanied by the banshee howl of its air-cooler. That's a serious drop in temperature for our new boy.

The standard speeds of the card are 675MHz and 800MHz on the core and the memory respectively – slightly up on the regular X1900XTX, which gets 650MHz and 775MHz. And that extra cooling power means there's potential for overclocking. We managed to wind it up to 732MHz on the core before the card fell over – compared with a mere 695MHz on the vanilla XTX.

However, you really don't need to overclock the Toxic XTX; it's a fruity enough already. The only thing it's missing is CrossFire compatibility, so at this level, your only dual-card choices are a pair of 7900GTXs or a pair of X1900XTs. And with around a £100 premium over the X1900XT, this card is great, but a little pricey. **Al Bickham**

top gear PCFormat

"The fan has two settings: quiet and very quiet indeed"

BENCH MARKS	IDLE TEMP	LOAD TEMP	STOCK SPEED	OC SPEED
TOXIC X1900XTX	44°C	65°C	675/800	732/805
STANDARD X1900XTX	44°C	95°C	650/775	695/790

More benchmarks and details can be found on your DVD

GPU	R580
RAM	512MB GDDR3
Core Clock	675MHz
Memory speed	800MHz (1.6GHz DDR3)
Form factor	PCI-Express
Pixel pipelines	16
API support	DX9.0c, OpenGL 2.0
Shader support	HDR, SM2.0, SM3.0
Card size	Dual-width
Dual card support	None

80% **PCF says…** "Cool, quiet, and very sexy, but these things come at a price."

gold
PCFormat

FLIGHT OF FANCY
Rock Pegasus 330
A laptop with a high-end processor that doesn't weigh a ton? Surely not…

Price £880 **Manufacturer** Rock Direct **Web** www.rockdirect.com

When purchasing a laptop, it's probably wise to check the load-bearing weight of your knees, given the morbidly obese 'portable PCs' currently being bandied about. Those desktop replacements are anything but portable, unless you've been spending a lot of time at the gym. It's time, clearly, for some notebooks you can comfortably use on your lap.

The Pegasus 330 is the sort of laptop that you'd look forward to opening up on a crowded train. Businessmen and will turn green with envy as you lay this beauty on your knees. Its sleek lines make for a sexy little notebook, and one that inspire a little commuter-envy.

DO YOU DUO?
The Centrino Duo processor will eat almost everything you can throw at it, and there's even a 5% overclock in the BIOS that doesn't void your warranty. With the integrated graphics, however, you're not going to be playing the latest 3D games, but then you shouldn't really expect to when you're paying a shade less than £900. The 512MB of system memory does seem a little low, but for an extra £50 you can have 1GB fitted.

The InstantOn function, bypassing the Windows boot in favour of a teeny Linux OS, brings you pretty much all the media centre capabilities you could wish for. It enables you to watch DVDs, listen to your MP3 library and even watch digital TV thanks to the packaged USB DVB tuner. Using the keyboard to set up music playlists can be laborious, but otherwise it works very well. The silent mode also improves power consumption, so fairly long periods *sans* leccy shouldn't be a problem.

The XVGA widescreen is crisp and clear, though the native resolution of 1,280x768 seems a little low it's still easy on the eye. The only issue is the smallish hard drive and the dead-flesh, Spectrum keyboard feeling of the trackpad buttons. If you're having to look this hard for faults though you know you've got quite a machine on your hands. **Dave James**

CPU	1.66GHz Intel Centrino Core Duo T2300
Memory	**512MB RAM**
Graphics	**Integrated Intel GMA 950**
Storage	**80GB SATA**
Optical	**Dual-layer DVD-RW**
Screen	**13.3in, 1,280x768**
Dimensions	**316x224x35mm**
Weight	**2.1Kg**
Warranty	**Three-year**

90% **PCF says…** "Dual Core joy in a sleek, compact and bijou form."

OUTER SPACED
Alienware Sentia m3400
Prepare to see this LAN party styling in a boardroom near you soon

Price £1,324 **Manufacturer** Alienware **Web** www.alienware.co.uk

With games-rig supremo Alienware assimilated into the Dell collective, the company has started making PCs which cross over into the business sector. This little notebook deliberately doesn't have the 3D crunching powers of its chunkier brethren, and its feature-set would seem to steer it towards Peter pinstripe, or those who fancy a portable media centre that's a bit more lightweight and shoulder-friendly than your average brick.

The Alienware styling, understandably important as a branding tool, may well be too iconoclastic for a suit's man-bag however, so let's assume Alienware is aiming this baby at media-munchers.

As a small form-factor laptop, designed for surfing and playing music and DVDs, it's pretty much a perfect unit. The integrated Intel graphics chip really can't cope with modern gaming, but it's fine for watching movies on the go, and the ever-respectable Pentium M processor is great for power saving and general Windows performance. The hard drive is the glittering jewel in this alien's tough carapace though, offering 160GB of storage waiting to be filled with goodness. And just as an aside, booting up for the first time, you'll notice the desktop is mercifully free of bundled hokum.

RATTLE AND HUM
It feels like a budget machine, though: the keyboard rattles, and isn't solid. That's as nothing, however, to the trackpad and buttons, which are unresponsive. Wthout a lock, the lid can flap open, too.

The thing is, it's not a budget notebook. You can pick up one of Alienware's 15.4-inch widescreen laptops with the same specs plus a 128MB 6600 Go for another £100. There's also that new Rock laptop, which is £500 cheaper, and features Core Duo, and real innovation. That leaves this Alienware model with nothing more than a "hmm…" **Dave James**

CPU	Intel Pentium M 2.0GHz
Memory	**1GB RAM**
Graphics	**Integrated Intel GMA900**
Storage	**160GB ATA100**
Optical	**Dual Layer DVD-RW**
Screen	**14-inch, 1,280x768**
Audio	**Digital 5.1 channel out**
Extras	**1.3 Megapixel webcam**

64% **PCF says…** "The build quality disappoints, and the price is off-putting."

top gear PCFormat

WATCH THIS

Casio Exilim EX-Z850

Can a calculator manufacturer divide and rule the digital camera market?

Price £269 **Manufacturer** Casio **Web** www.exilim.co.uk

This likeable snapper makes up for design that could be termed 'dull' with good performance and useful extras at a keen price. An 8.1Mp sensor and 3x optical zoom for £270 is not much to shout about these days, so Casio's tried to make the Exilim stand out by a stack of extra features, like anti-shake technology.

At the same time, the Exilim is very easy to use. As you move the mode dial, you're told exactly what option you've selected, which will be a big help to beginners. What's more, the bright, well laid out screen and sensibly placed navigation buttons make it a cinch to change settings, and the camera will also warn you of under or over-exposure.

A TOUCH OF GLASS

The Exilim also comes with a generous helping of scene modes. While these are useful, we were more impressed by the proximity and power of the manual controls. Nudge the dial to Aperture, Shutter Priority or Manual, and it's very easy to throw the background out of focus on a portrait, for instance, or slow shutter speed to a crawl for some great water effects. There's

no trawling through menus, so the Exilim encourages experimentation.

Image quality isn't perfect: the shots are slightly soft, and the camera tends to overcook reds and greens. The lens is good, though, and there's little fringing or barrelling to complain of. Another bonus is Rapid Flash Mode. This is handy when shooting in poor light, as it takes three flash shots per second. Anti-shake definitely comes in useful, particularly for close-ups. This is a very well-appointed camera, with features to suit most users.   **Geoff Harris**

Sensor 8.1 megapixel, 1/1.8-inch CCD	
Focal Length 38-114mm equivalent	
Maximum Aperture F2.8-5.1	
Memory SD slot	
ISO range 50, 100, 200, 400	
Exposure modes Best Shot (includes scene modes), Snap Shot, Aperture AE, Shutter Speed AE, Manual	
Metering modes Multi-pattern, Centre-weighted, Spot	
Flash modes Auto, High, Soft, Red Eye,	
LCD monitor 2.5 inch	
Weight 130g (without battery)	
Power supply NP-40 Li-ion rechargeable	

85% **PCF says…** "A great family camera with plenty of extras."

AMPHIBIOUS ASSAULT

Pentax Optio WPI

top gear PCFormat

Finally, a high-end digital camera that you can chuck into the briny with impunity…

Price £170 **Manufacturer** Pentax **Web** www.pentax.com

Whether you're gliding above a tropical coral reef or just playing submarines in the bath, the Pentax Optio WPI is immune to the usual tear-jerking results that occur when consumer electronics meet H_2O. This enables you to take lovely, crystal-clear shots underwater. It's a neat trick which, to be honest, most of us won't use most of the time. But as an added extra, it's a cracker. The camera's rated to 30 minutes' use at 1.5 metres depth, and of course, if you're simply outdoors, rain won't stop play.

PARTY PIECES

But any device needs more than a gimmick to recommend it. And fortunately, this silvery lozenge has the smarts to back up its party trick. Its sensor is capable of six-megapixel images, which at the highest quality setting means a 2.5GB JPEG printable at A4 or higher. The image quality is pretty damn sharp too, though the flash is well worth toning down, even in well-lit environments, as it's prone to washing out scenes. Pretty much everything is alterable however, from the flash strength to the white balance and shutter speed, as well as just about every other variable on the cards.

It also has some handy onboard functions to help you bypass the PC photo-manipulation stage altogether, such as red-eye removal, cropping and colour balancing. There are also some handy histogram

overlays to help you get the balance right.

But for those who simply can't be arsed, you don't need to – at heart, it's a point-and-click snapper, and the default 'Green Mode', with auto-flash, autofocus and auto-everything, is not only a doddle to use, it comes up with reasonably good shots. The only downside is the fact that there's no lens cover, automatic or otherwise; there's merely a clear lens cover over the internal 3X optical zoom lens. And while it promises proof against scratches, we're sure a day in the trouser pocket with a bunch of keys might disagree.

Overall, though, it's a great little camera with, for a change, a worthy gimmick. At least now we've got an excuse to book some time off abroad…   **Al Bickham**

Sensor 6 megapixel, 1/2.5-inch CCD	
Focal Length 38-114mm equivalent	
Maximum Aperture F3.3-4.0	
Memory SD slot	
ISO range Auto, 50, 100, 200, 400	
Exposure modes Green Auto, Fully-programmable, 16-Picture Auto	
Metering modes Spot, Pan, Focus, manual, Infinity, nine-point auto	
Flash modes Auto, Soft, Red Eye, Always On, Always Off	
LCD monitor 2.0 inch	
Weight 135g (without battery)	
Power supply D-L18 Li-ion rechargeable	

86% **PCF says…** "Well-priced, waterproof, and it takes great shots. We love it."

BIG DADDY
HP Photosmart 8750

Giant images can be yours, thanks to this impressive A3+ printer

Price £326 **Manufacturer** Hewlett-Packard **Web** www.hp.com

Yep, the Photosmart 8750 is a pricey beggar. But then again, the photos it produces can be huge – up to 13x19 inches. This lets you to make the most of the latest digital cameras, with 8MP pictures that could double as wall hangings. The HP can also utilise as many as nine ink colours simultaneously, generating a much wider colour space than most photo printers. The inclusion of a special 'grey' cartridge, offering three hues, also makes for superb mono output.

MOODY BLUES
Marketed as a 'professional' printer, some of the consumer-friendly trickery has gone by the wayside, so there's no colour preview screen. However, you still get a multi-format card reader, a healthy range of control buttons and a basic menu screen panel for on-the-spot colour proofs. Multiple paper input trays give you the option of feeding in paper from either the front or the back of the printer, as well as via a single-sheet bypass feeder for one-off or card printing.

In its standard configuration, the quality of mono or colour photo printing is very good. However, an extra, optional blue cartridge really brings holiday photos to life. Performance in speed is nothing to write home about but, then again, 13 minutes is worth the wait for an A3+ photo, ready for framing.

Running costs are less than some of the competition – no mean feat, since unlike Canon and Epson examples, HP gives you a brand new print head with each cartridge. A sturdy workhorse of a printer, with HP's usual solid build quality, the Photosmart 8750 will be around more than long enough to repay the extra initial investment it commands.   **Matthew Richards**

Technology	Thermal inkjet
Maximum resolution	4,800x1,200dpi
A4 photo print speed	6m 04s (Best quality)
10x15cm photo print speed	2m 36s (Best quality)
Ink colours	Nine inks
Ink cartridges	Three cartridges
LCD screen	No
Card reader	Yes
Interfaces	USB, Ethernet
Dimensions	64x40x20cm
Warranty	One year

85% **PCF says…** "Big,cost-effective prints, but it's a tad slow at high res."

WORKING CLASS HERO
Epson Stylus Photo R220

Cheap printers are expensive and only give second-rate results, right? Wrong…

Price £69 **Manufacturer** Epson **Web** www.epson.co.uk

We live in a world of shrinking technology, but photo printers seem to be bucking the trend. Most are actually getting larger, sprouting LCD screens, card readers and all sorts of other frippery. The Epson R220 takes the opposite approach, cutting down its size, weight and cost to a minimum.

QUALITY AND SPEED
The R220's feature set is actually so basic that you don't get any direct printing facilities at all. There's not even a PictBridge port, although you do get two USB ports so that you can connect it to a PC and a Mac at the same time *[Why? – Ed]*. More importantly, the R220 is based on a full six-ink photo printing engine, built around Epson's Micro Piezo technology which can output up to 5,760dpi.

For our money, quality is a lot more important than print speed. After all, if you're wanting to keep the prints for a lifetime, having to wait a few minutes for your results isn't a bad thing. As it is, the R220 took around five minutes to output full, borderless A4 glossy photo prints in our tests, and just under two minutes for borderless 10x15cm photos, both in 'Best'

quality setting. That's about twice as long as it takes with the Canon iP6600D, though.

Photo quality itself is stunning. The colours combine to give natural skin tones, and are equally adept at recreating bright colours. Brightness and contrast proved spot on in our tests, too. Another bonus is that, while most budget printers are expensive to run, with overpriced consumables, the R220 has replaceable ink tanks for each individual colour, and ink costs about £1.30 per A4 photo print. Which makes the R220 a high-spec bargain.   **Matthew Richards**

Technology	Inkjet (piezo-electric)
Maximum resolution	5,760x1,440dpi
A4 photo print speed	5m 01s (Best quality)
10x15cm photo print speed	1m 51s (Best quality)
Ink colours	Six-ink
Ink cartridges	Six individual cartridges
LCD screen	No
Card reader	No
Interfaces	USB
Dimensions	46x26x20cm
Warranty	One year

90% **PCF says…** "Stunning photo print quality at a knock-down price."

ROUND-UP

Stars of CCTV

Webcam technology has improved a great deal in recent years. Join Neil Mohr as he gives the latest examples the beady eye

They're watching us, always watching. Sat up there, perched on top of our monitors, sitting, staring, plotting against us. They're panning and tilting to track our every move. Some zoom in on our beautiful faces, and we suspect they're documenting what we do, saving video clips when we come into range of their sentinel gazes.

We have fuzzy recollections of the original webcams. Fuzzy, blurry, jerky, and sadly disappointing recollections. But this is the bright, high-speed broadband age, and that was back in the day of 56k modems and The Spice Girls. So surely we can expect better now? The answer is: mostly.

ZOOM IN

Webcams today do pretty much what they've always done: capture stills and video of you, or the environment around you, for transmission across the internet. The obvious application is voice-chat, and with this in mind, all these cameras come with instant messaging software. However, don't expect sparkling definition. Webcams will give you neither the sheer resolution or sharp image quality of a standard multi-megapixel digicam. But bear in mind these devices aren't designed to create beautiful landscape shots, they're for simple communication and fun pictures. After all, if your aim is to create a 640x480 video or image, what more do you need?

And what webcams may lack in pure image quality, they more than make up for in convenience. It's also interesting to see that all these cameras come with monitoring software that can capture video or stills when there's movement detected. More recent developments also include face-tracking, which is very clever stuff. In short, you get a fair bit of functionality for your money.

HOW WE TESTED

To get the most out of these webcams, we plugged them in and stared at our craggy mugs in a well-lit room. And while the sight may well send young ladies running in horror, it's perfect for webcam testing.

We looked for accurate white balance capabilities, colour correction and vibrancy, along with a sharp, detailed picture and a high frame-rate in capture mode. We also tested them in low-light conditions, as this can push the cameras beyond their capabilities. We also assessed the build quality of each camera, along with the supplied software, all of which can vary widely and greatly effect performance.

Photography Jesse Wild

WebCam Slim 320 Black £25
Manufacturer Genius **Web** www.geniusnet.com.tw

You generally get what you pay for in this life, but even with this bog-standard unit, we feel they could be overcharging. It definitely has the worst image performance on test, though it's not lagging too far behind the Logitech. The 320 also looks like it fell out of a packet of dominos; in short, there's little here worthy of praise. The stand is decidedly naff, and while compact, the camera isn't what you'd want from a laptop webcam either. The supplied software installs just fine, but looks very amateurish. It also offers motion detection, video and still image options, but frankly, none of these features measures up to those of the other cameras on test. With less than mediocre results, look elsewhere to spend your money.

Still image resolution 640x480

Video resolution 640x480

Extras Microphone, USB 2.0

50% **PCF says…** "A low-cost option that performs below expectations. Unrepentantly mediocre, and outclassed in this field."

WebCam Live! Motion £100
Manufacturer Creative **Web** www.europe.creative.com

If you want your webcam to engender envy in all who see it, the Live! Motion from Creative is the way to go. Looking more like a machine from Eighties sci-fi classic *Tron* thanks to the neon-blue inlaid circular lights on each side, this webcam takes things to another level by being totally motorised. No longer do you have to flail around trying to line up the camera; using the Live! Motion software, click on the edge of the image and it'll pan or tilt in that direction. There's also an automated tracking mode, though it did get our faces confused with the wall a couple of times. Despite the occasional poor focus, it offers image-quality second only to the Philips, and with excellent bundled software, only the price might put you off.

top gear PCFormat

Still image resolution 640x480

Video resolution 640x480

Extras Headset and mic, motorised tilt and pan

80% **PCF says…** "Top of the range with a price to more than match. Impressive image quality and smart styling go some way to explaining its price point."

QuickCam Zoom £50
Manufacturer Logitech **Web** www.logitech.co.uk

If you're handing over fifty big ones for a webcam, it had better do the business. The Logitech QuickCam Zoom looks impressive, and even a wee bit retro, thanks to the rounded shape. It also has a quality flexible monitor grip that'll keep it firmly in place on a TFT or CRT monitor. The poor white balance, bad low-light performance and reasonably slow refresh rate didn't impress us, but the face tracking worked well. And one of the best things about the camera is actually the software, which allows you to paste clipart-style features onto your face – such as glasses and hats. The camera then tracks your face movement with the image applied, and does an amazing job. In short, it's an average webcam with hilariously entertaining software.

Still image resolution 640x480

Video resolution 640x480

Extras Integrated microphone, 3x digital zoom, face tracking

72% **PCF says…** "Lacklustre image performance doesn't impress, despite its good looks, but the software is certainly worth a look."

Turn over for the winner…

gold
PCFormat

WINNER!

SPC 900NC Pixel Plus £50

Manufacturer Philips   **Web** www.philips.co.uk

It may be just a webcam, but this sexy little number from Philips really looks the part. Its silver and black gloss finish makes it one of the better looking peripherals to pass through the *PCFormat* office in recent memory, and it perches perfectly on top of a TFT monitor thanks to the craftily designed integrated stand. As well as pleasing aesthetics, this camera also has some useful and well-executed features. Head-tracking software crops and zooms to your beautiful face, and image enhancing software provides a crisp, sharp image even in very low-light conditions – quite impressive for a webcam. Plus, the integrated microphone reduces cable clutter and works very well. With one of the best designed control panels, and the very flash looking but easy-to-use *V-Lounge* software, there's an awful lot to like in this dainty yet stylish webcam.

Still image resolution 1,280x960

Video resolution 640x480

Extras Max. frame-rate 90fps, integrated light and microphone

"The Pixel Plus is one of the best looking peripherals to pass through the PCF offices in recent memory"

90% **PCF says…** "The best image quality, styling and software at the right price. If you're after a webcam, you can't go far wrong with one of these."

Pocket money pages

SUB-£100 GOODIES FOR THE BARGAIN HUNTER

Sennheiser PC160 Headset

Harangue n00bs in comfort and style

Price £56 **Manufacturer** Sennheiser **Web** www.sennheiser.com

With VoIP becoming ever more popular, the flimsy headsets of yore no longer cut the Grey Poupon. We need something that sits comfortably around our lugs and won't cause 'headphone headache'. Also, we ought to be able to listen to music and games through the headset at reasonable fidelity.

Enter the PC160 headset**.** The phones feel sturdy but are light and comfortable. Sound quality is generally good, with a definite lean towards the lower end of the spectrum, ensuring that both basslines and rocket blasts sound emphatic.

Our major sticking point, as is often the case with headphones, is the price. For the casual user, £56 will seem awfully steep. As it is, there are few enough headsets with microphones that provide decent sound quality that we can recommend the PC160, but only to those serious about both aural fidelity and VoIP.

top gear PCFormat

86% **PCF says...** "If you feel you need the quality, you could do much worse."

OCZ Rally 1GB

gold PCFormat

Price £35 **Manufacturer** OCZ Technology **Web** www.ocztechnology.com

We were ready to taunt the OCZ Rally drive's branding. What exactly is it that a USB memory stick has in common with a muddy Impreza? Well, when we took this drive head to head with standard 1GB efforts, we quickly found out the answer. It has a not-inconsiderable turbocharger stuffed down the front of its slacks. This OCZ stick has read speeds that are around a third quicker than a standard flash drive, and write speeds that slice the times of equivalent devices in half. This really is phenomenal performance. We managed to find this svelte, aluminium clad wonder for a measly 35 quid online and it's worth every penny.

93% **PCF says...** "Like a normal USB stick, only much quicker."

Sandisk Cruzer Profile

Price £30 **Manufacturer** Sandisk **Web** www.sandisk.com

This is a USB drive with a twist. Unclip it and it also contains a fingerprint scanner. This keylogger-stumping device means you need never remember another password again. The scanner is supplemented with a tool for securing data on the drive, and it works, but it's clunky. You can drag files from the shell to the program to encrypt them, but then if when you wish to decrypt them, you have to go through a decryption process. Add to this the fact that the device itself isn't much of a looker, and you have to be pretty serious about security to want one of these.

72% **PCF says...** "Does the job, but it's in no way desirable."
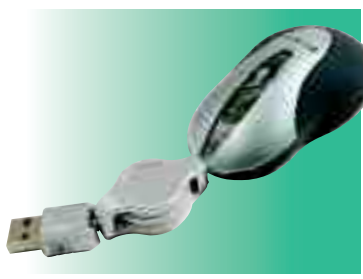
Mini Lighted USB Mouse

Price £17 **Manufacturer** Belkin **Web** www.belkin.co.uk

Despite the fact that *PCF* takes a lot of train journeys, we've rarely seen anyone using one of these. Even with *PCF*'s delicate digits, we found it uncomfortable to use. Another thing we found uncomfortable was the mouse's title. Maybe we're being pedantic in this age of 'txt spk' and the apostrophe shotgun, but surely, the past tense of the verb 'to light' is 'lit'. We would, of course, knock marks off for poor grammar, but then claiming a win with it in the not-quite-patented *PCF Quake IV* stress-test reminded us that the preservation of the nation's language is someone else's job.

66% **PCF says...** "We'd go for a cheaper, 'non-lighted' version."

Blueye THX1138

Price £60 **Manufacturer** Mavizen **Web** www.mavizen.com

Naming your hardware after an obscure George Lucas film is one way to avoid version numbers, but which route will Mavizen take for the next edition? Will we see the Blueye American Graffiti some day? Bizarre naming conventions aside, this piece of kit is designed to interrupt MP3 playback, warning you that you have an incoming phone call and allow you to make said call hands-free through your headphones. Unfortunately, rather than being an inconspicuous method of answering calls, the device itself emits piercing tinny noises when you get a call. Why is anyone's guess.

56% **PCF says...** "Large, pricey and somewhat irritating."

Imation USB Micro Drive

Please welcome the illegitimate offspring of Zippo and Chubb

Price £99 **Manufacturer** Imation **Web** www.imation.com

This lump may have the look and feel of a cigarette lighter, and the dimensions of one, too. In fact, we're of the half-serious opinion that this dinky brushed steel 4GB hard drive is the product of some graphic designer's pub-based observations after a particularly hard day at the office.

Or maybe it's a padlock? That would certainly seem to be the drive's USP. A large flexible loop with the USB plug on the end entices the user to wrap it around a belt, and sheep that we are, we complied. Trouble is, the locking mechanism is naff, and it only takes a little wobble to pop the plug out and lose your precious data. So, the Imation's gimmick is a failure, but luckily the drive itself is great. It's quick – 5Mb/s read and 3Mb/s write, reliable and not too pricey. If the lock was reliable, we'd have given it a glowing score. Despite the 128-bit encryption, as a simple 4GB microdrive it's not offering enough for the price.

Capacity 4GB

Dimensions 1.61x0.66x3.3in

Encryption 128-bit

Read/write speed 5MB/s read, 3MB/s write

76% **PCF says…** "Nice 128-bit encryption, shame about the dodgy lock."

Jabra BT620s

Price £65 **Manufacturer** Jabra
Web www.jabra.com

Another hands-free set, but while the idea is the same as that of the Blueye THX1138, it manages to solve one problem, yet create another. The BT620 hides its Bluetooth tech inside a stylish pair of headphones. You can even turn the lights off if you don't want to look like a goon. Unfortunately the only compatible MP3 players are those that stream audio via Bluetooth – no iPods, then. Surely including a line-in socket that worked with the music interruption facility wouldn't have been too much of a stretch? As it is, this is a neat Bluetooth hands-free kit held back from greatness by its limited compatibility and price.

65% **PCF says…** " A smart headset, but not all that useful."

Mercury Web Digital Camera

Price £10 **Manufacturer** Mercury
Web www.techfever.co.uk

This camera has a lot of promise, but only moderate punch. While it sports a metal chassis and a sturdy clip, its pizzazz lies in its lighting. The camera detects how dark it is, and fades in four lamps to compensate for the low-light. It's a nifty little feature if you have the lights off, but even when placed on a well-lit desktop and angled back, enough shadow falls over the sensor that the lights can blind you while you type. The main flaw however is the low picture quality which, at a maximum 640x480 with 15 fps, can be annoying even with the chump-change price tag.

52% **PCF says…** "Not perfect, but handy nonetheless."

Kingston Data Traveler Elite – 4Gb Privacy Edition

Price £176 **Manufacturer** Kingston **Web** www.kingston.com

This is a formidable drive on every front. It boasts incredible capacity, speed and cost. The two biggies of this device are the sheer amount storage available on a small stick, and the privacy software. Boasting 128-bit encryption, the drive is safe from virtually any hacker. Of course, the major downfall with this device is the cost - counting up to £175, it's a tad extreme. Bear in mind that for that price you can get a portable 100Gb hard drive and still have a tenner left, and you'll question whether its worth the cash, considering how easily it may be lost.

75% **PCF says…** "Expensive, but this is king of keyring storage."

Long term test

RATINGS BEYOND THE WARRANTY

Saitek P3000 Wireless Game Pad

PCF 143 76%

When I got my first PC, I had one of those large joysticks modelled on the F-16 controller. It was solid, heavy and by all appearances it looked like it was built to last. Sadly it didn't; six months was all that stood between it and replacement.

Sticking with the traditional mouse and keyboard setup served me well enough from then on, until a couple of years ago when my brother bought me a P3000 pad for Christmas. I wasn't convinced that a wireless pad would guarantee the performance I was expecting, nor the durability I required. Two and a half years later, and I'm still throwing worryingly tail-happy German touring cars around the twists and turns of the famous Nürburgring with great abandon.

Battery life is fine, and so long as there's a line of sight between the dock and the pad, gameplay is uninterrupted. All I could wish for is a couple of extra shoulder buttons for Pro Evo 5 sessions.   Dave James
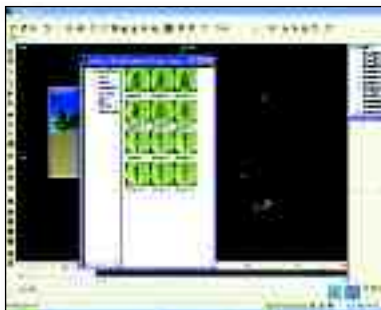
We want your reviews… of still-loved old kit: al.bickham@futurenet.co.uk
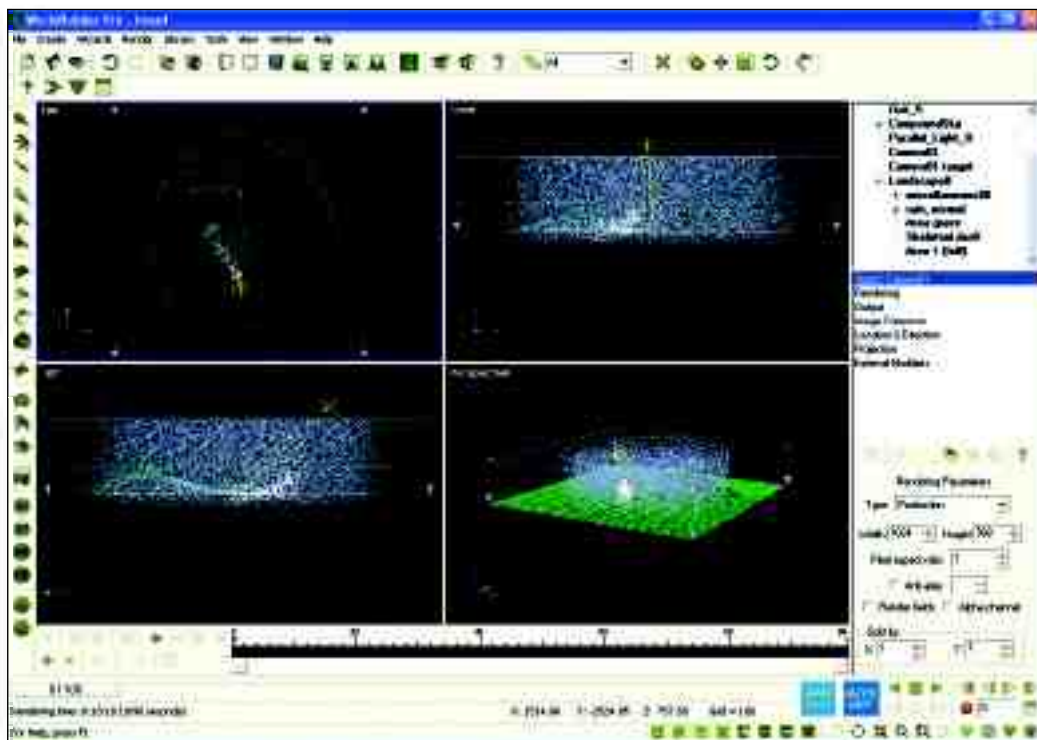
The trees are hyper-real, the grass is great and... ah. It's raining again...

World Builder ships with a huge library of vegetation, but some are so complex it may be quicker to grow your own.

Standard 3D views are easy to navigate, but you'll need the cheat sheet to decipher those icons.

PLANET DESIGN

World Builder 4 Pro

Are you bored with the world we live in? Build your own from scratch and show the Creator how it should have been done

Price $700 (Pro)/ $180 (Genesis) **Publisher** Digital Element **Web** www.digi-element.com

According to **The Bible,** God built the world, and all the plants and bunnies and bacteria that live on it, in six days. And on the seventh day, he waited for the render to finish. If He'd been using *World Builder*, a few more paragraphs may have needed to be added to The Good Book.

Since the days of 16-bit computers, software has promised mere mortals the chance to play god and build creations as they see fit. Admittedly in the early days, this was only true if you saw fit that the world should really be made up of giant triangles. Volcanos on Mars? Red triangles... Grand Canyon? Yellow triangles... Things have moved on though, and the latest terrain-building software really can produce realistic-looking scenery.

With this software, you can knock together a landscape in less than an hour. But it *will* look rubbish. As with anything in life, the amount of thought and effort you put in will determine the merit of the output. *World Builder* certainly assists you along the way, though. A pre-built library of plants and

trees speeds things along, as do some of the time-saving features, such as being able to fill an area with a type of plant (or variations thereof). The standard 3D working environment should quickly become familiar, but you may need a few weeks to familiarise yourself with the tool icons.

PHONE A FRIEND
One of the improvements here is better communication with other apps. If you're working with *Poser*, *3DS* or *Lightwave*, you'll find it easy to integrate landscapes together. *World Builder* uses a slew of formats, and can even import animation – all the better for recreating Mordor or, well, anywhere you like. This is one of the only real differences between the Pro version ($699) and the Genesis version ($179) – the latter lacks animated camera effects, some import options and some vegetation, but is otherwise just as powerful.

The price may be as steep as one of the virtual volcanos you might while away

"Much more realistic than the best efforts of cheaper apps"

a couple of hours creating, but if you put the necessary effort in, the results are much more realistic than those of the cheaper apps you could plump for.

Be warned about the minimum specifications, though. Although the software features some nifty speed-enhancing tricks (like keeping the Z buffers and only re-rendering the bits that have changed), most of the plants are very complex. Adding a tree can take a few minutes, and that's just placing it and rendering the wireframe view. It can be a very realistic simulation of that time-honoured pastime, watching paint dry. Our tip - wait until you can afford a dual-core processor. Otherwise you may find it faster building your new world with a pick and a shovel. **Nick Veitch**

Needs 2.4GHz CPU, 512MB RAM, 32MB 3D card, 40MB disc space

Wants 3.2GHz CPU, 1GB RAM, 64MB 3D card with 32MB RAM, 400 MB disc space

74% **PCF says...** "A great, powerful application, but only for those with a serious God complex."

BOOTING BLASPHEMY

Boot Camp

Put Windows XP on a Mac, and with Apple's own program no less…

Price Free **Publisher** Apple **Web** www.apple.com

Thinking of heading down to Hell in the near future? Remember to pack your ice skates. It really has been that kind of month. First, we found out that we could install Windows on a Mac. Then Apple released some software to actually help you do it!

The software in question is *Boot Camp*. This utility has been created for the sole purpose of putting Windows onto Macs. As yet, it's only in Beta form, but the idea is that it'll come pre-installed with Apple's next-gen 'Leopard' OS, due out later this year.

To make use of *Boot Camp*, you must own a Mac with an Intel processor, plus a Windows XP Pro or Home installation disc (Media Center's no good). A major downside is that your XP disc must have SP2 – so anyone who bought XP more than a year ago is out of luck. There's also no Vivv support.

PUTTING THE BOOT IN

The reason that you couldn't previously install Windows on a Mac was the incompatibility between the EFI and BIOS boot mechanisms. Getting around this issue must have taken some pretty sophisticated coding. Still, you'd never have guessed it from looking at Apple's software.

First up, you're prompted to create a driver disc. This doesn't require you trawling around the various Intel and ATi download sites however; instead, you just click 'Okay'. Apple has done all the hard work. This is a marvel, as once you've finished the process, you simply pop the disc into your drive, and Windows recognises all the alien Mac hardware.

Equally impressive is the disk partitioning. Doing away with all the complications that usually surround this process, *Boot Camp* simply asks you to slide a divider left and right to enlarge or shrink your Windows partition. Even better, it doesn't delete any of your data; it just creates a new section within your empty space. When all's said and done, you're left with a dual-boot system; you just hold **[Alt]** on bootup to select between Windows and OS X –as yet impossible to achieve on a PC. The fact that Apple now provides the means to put Windows XP on a Mac free of charge gives it a huge advantage in the eternal race to sell hardware. **Russell James**

Needs Mac OS X Tiger v10.4.6, The latest Firmware update, 10GB free HD space, an Intel-based Mac, a blank recordable CD, an XP SP2 installation disc, with serial number.

Wants Intel Core Duo CPU, 1GB DDR2 RAM

90% **PCF says…** "*Boot Camp* could mark a real turning point for Mac users."

gold PCFormat

HAZARDOUS WASTE

Registry Repair 2005

Cleans up your registry… and everything else, apparently

Price £20 **Manufacturer** Stompsoft **Web** www.stompsoft.com

We're all for registry cleanup apps. *System Mechanic* is the one that springs to mind first – it's reliable, does the job, and you can actually feel the difference in performance after a good cleanse. And so we come to Stompsoft's latest effort, *Registry Repair 2005*.

Now, here's a little anecdote. An office Windows XP installation was in dire need of a nip and a tuck, so *Registry Repair 2005*'s arrival seemed… fortuitous. Setup was a cinch, and the clutter-free interface is a joy to use. It gives you the usual backup options in case you remove something essential, and the simple scheduling system works well.

So, first time out, we ran the scanner, which picked up hundreds of problems in the old registry. Fine, quite believable – that PC has seen more bolt-ons than Ivana Trump. The scan finished, we clicked 'Repair Checked Items', and then the problems began.

On reboot, Checkdisk fired up; it had had a sniff of the C drive, and informed us that "The volume is dirty". Imagine our horror as it started wiping out countless SYS and BAT files. Yep, the bloody thing had committed software suicide by wiping its own boot sector. Cheerio, Windows installation.

WHAT REGISTRY?

Given the vagaries of the OS, bad things can, and do, happen, so this could have been a one-off. But we've never seen a PC so catastrophically purged of usability. And the only thing we can attribute it to is the use of *Registry Repair 2005*. But we had to know for sure, so after formatting the drive and reinstalling XP (grrrnn!), we reinstalled the app. And lo and behold, it picked up tons of innocent registry entries which it classed as problems. As a result of all this heartache, we neither trust, nor can we recommend this piece of software. **Al Bickham**

Needs 300MHz CPU, 400MB free HD space, Windows 98

Wants 1GHz CPU, Windows XP

10% **PCF says…** "We've contracted malware that was friendlier than this."

Gaze upon the instrument of your computer's destruction.

TACTICAL SHOOTER

Ghost Recon
Advanced Warfighter

The most intense and deadly urban combat game ever made?
War can be hell, but it can also be heavenly…

top gear PCFormat

Price £25 **Publisher** Ubisoft **Developer** Grin **Web** www.ghostrecon.com

With the slow deliberate bludgeoning of *Rainbow Six* into *Lockdown* (primarily to make the franchise more accessible, for reasons we surely don't have to go into, do we?) and all the fanfare for *Ghost Recon Advanced Warfighter* occurring around the 360 version, you'd be forgiven for approaching *GRAW* PC as you would an alley in some rebel-held quarter of ooh, say, Mexico City. You'd approach it with caution and a trigger finger itchy to deliver a mercy killing.

But ease down, soldier: thankfully *GRAW* doesn't need two in the chest and one in the head. Swedish developer Grin has managed to do the discerning tactical shooter fan's franchise of choice justice, creating a game that may not be exactly be what *GR* veterans are used to, but delivers an experience of war they won't forget.

To briefly set the largely irrelevant scene, Mexico City is in the middle of a coup d'etat and, horror of horrors, it's happened just as the President is in town for a visit. Cue the insertion of your crack four-man soldier elite, the Ghosts, all teched-up to fight on the Battlefield of the Future™, complete with satellite imaging and tactical HUD overlays.

LEAP OF FAITH
It's all just an excuse to get you and three friends surrounded by a concrete jungle teeming with hostile forces, but boy, has Grin nailed that sense of place. From the moment you leap from the back of a C-130 and see the city spread out below you, to your last Blackhawk extraction you will believe you have *been* somewhere in a way no other shooter we can think of manages. The realisation of Mexico City may not be Ordnance Survey accurate, but there's a truly seamless sense that the world into which you've been dropped *exists*. As soon as your feet touch the ground you feel the pressure of the dusty walls closing in, aware that death could be waiting with a machine gun around any corner. Cleverly, you have to descend into the hot, dark and light urban sprawl from your landing atop a highway flyover, and once you're down there, below the threatening rooftop vantages and in amongst the alleyways, that extraction can't come soon enough. Sense of place is the first thing *GRAW* does very, *very* well.

It's merciless game. Not always one-hit-one kill (though it can be), but it punishes player rashness ruthlessly. Step out into the street without scouting the lines of sight first and you *will* get your head blown off. Every mission is a slow, sometimes agonisingly so, process of inching your way toward objectives,

Unique multiplayer
Because we all love a bit of Domination

The multiplayer Domination mode has been drastically cut back from the ambitious original plan. We were promised a mode where areas of the map are held by weight of numbers. Captured areas would provide bonuses like the Sat Cam and Drone. What we have instead is half of that. A team-deathmatch that has the areas of domination, capturable only if there's a link between it and an already owned region, but no sign of the goodies.

"The Sat Cam is the only reason you survive being obscenely outnumbered"
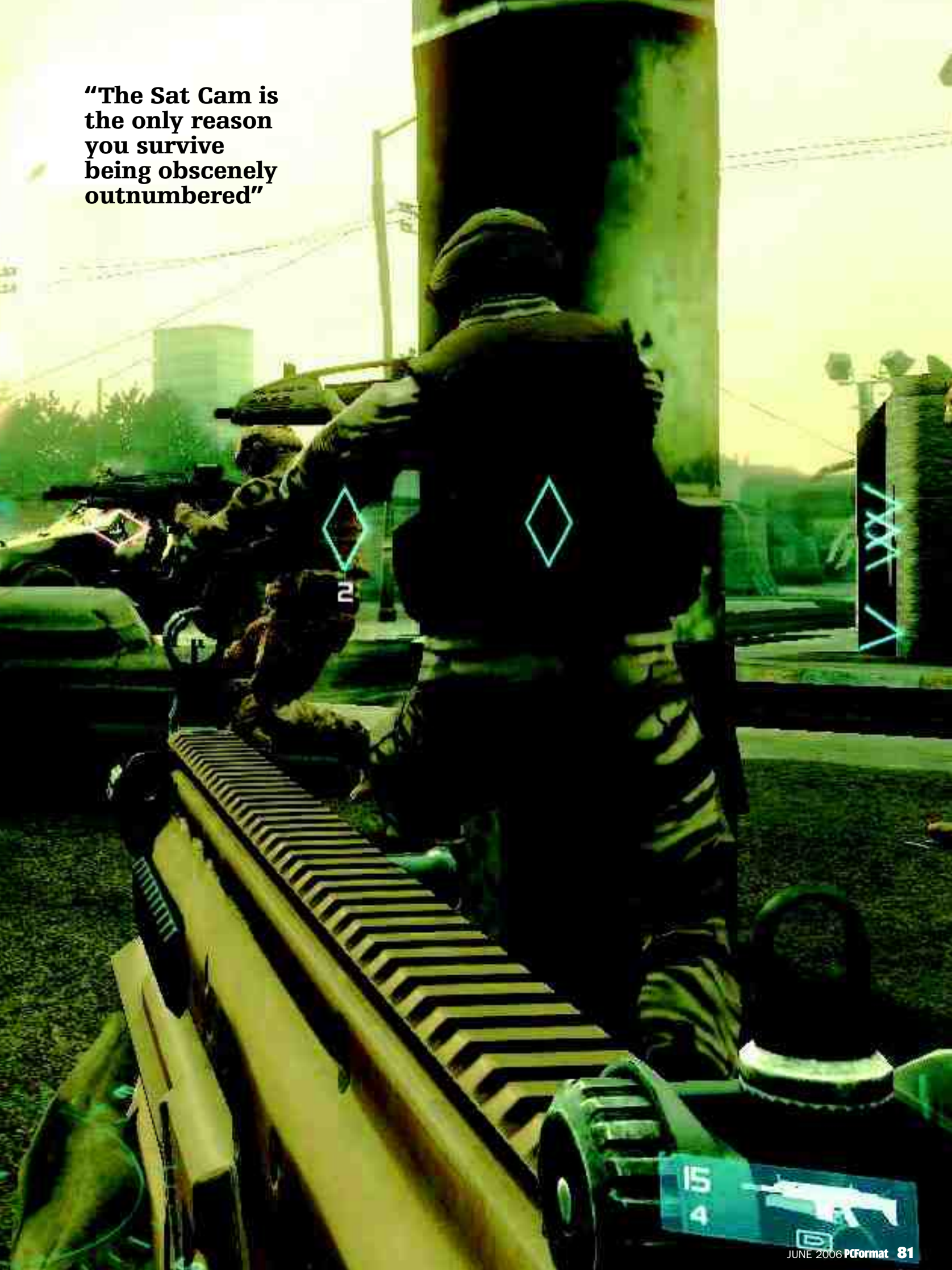
checking corners and concealed balcony vantage points with a quick duck out from cover before moving past them. You can guarantee that the one time you get cocky and try your luck will be the time there is someone watching.

Luckily you have access to various visual gadgets. The much vaunted X-Comm (cross-comm) can give you a direct visual feed from whichever squadmate you have highlighted at the time. This is constantly relayed via a wireframe representation in the top left of your HUD or you can switch to a full screen, black and white image. You also get to use hovering camera drones in much the same way, ordering them around the battlefield to scout positions you dare not send squadmates into. But by far the most useful tool is the Sat Cam. It's nothing new, but it's utterly indispensable. It's the only reason you survive being obscenely outnumbered and always surrounded. Ideally, you'd control every situation from its orbital view, issuing orders to your men, organising them to repel attacks or get into position for an ambush. But in

From the chopper, the city stretches out below you.

Now *that's* how to open a game.

reality you're far more likely to use the shortcut orders simply by looking at a point in-game and clicking Move or Cover from the mousewheel-controlled menu. This is especially true when you're getting shot at. Most of the time, then.

STREET FIGHTER
So this is the world of *GRAW* then. Imagine a city, full of entrenched enemies that will outflank you at any opportunity. You make your way through it, checking all the angles, ordering your men with the map or directly, moving street by street, plaza by plaza, very, very

You may be an advanced warfighter, but tanks are a handy Plan B.

slowly. It's tense all the time. So much so it's actually physically tiring. And when you get tired, you make mistakes. It might be that you don't spot a few men until it's too late and blunder round a corner into startled shouts and aimless gunfire, or it may be that a literal truckload of reinforcements hurtle into the open plaza you're crossing before you get a chance to see them coming, but whatever the cause the results are the same. A frantic firefight. In stark contrast to the slow paced, well planned ambushes you frequently make, these firefights are crazy, hectic moments where you make good use of the excellent 'sliding-to-cover-on-your-ass' move, bullets tearing out chunks of masonry around your ears as you desperately return fire and try to control the situation before someone on your team gets killed. When firefights like this happen, it's deliriously loud and manic and fun and scary and it's the second thing *GRAW* does very, *very* well.

GHOST BUSTED
But crushingly *GRAW* is flawed. Deeply and fundamentally flawed. It's let down by a two-pronged failure of design and execution, manifested in two utterly crucial elements – AI and level design.

Let's get the most serious out of the way first; level design. AI is less critical for reasons we'll explain shortly. The

Reasons to be tearful…
Three things that hold *GRAW* back from greatness

1 Appalling Team AI. The Mexican rebels will happily surround and engulf you, but your teammates are complete buffoons who, because they're desperately trying to cover your back at all times, will walk backwards around corners and push you out into the street. Thanks, guys.

2 Sat Cam orders in Co-op. We've said that *Advanced Warfighter* is meant to be played cooperatively, so why can't other players see orders laid out on the tactical map by the squad leader? Other cooperative mode issues abound, like a generally poor interface and several unoptimised missions.

3 Incongruous levels. Just when you're getting used to team-based street fighting you'll be whipped off to play a solo mission (playable cooperatively if you're online), in a park or on a remote hilltop. *GRAW*'s strength is the urban environment and it's missing big chunks of the game.

The Cross Comm
The wireframe view from your squadmates. You can switch to a full-screen, fully rendered view too, but this gives an instant impression of their surroundings as they glance about.

Physics without PhysX
Even without an Ageia PhysX card (see page 52) *GRAW* has some impressive physics. There's always plenty of debris flying and foliage wobbling under gunfire.

Icon o' class
Varous shaped and coloured lozenges decorate you HUD. Objectives, red markers indicating enemies someone on your team can see (even if you can't) and waypoints for co-op play.

Kit-as-trophy
Wear your gear with pride. Before each mission you must balance weight against agility, trouble is you never know what you'll encounter beforehand, so you end up carrying loads, like this poor chap.

Incoming fire!
The compass is essential for quick reference in a firefight. Calling out incoming fire and the like to your noble and trusty squadmates.

"It's so tense that at times it's actually tiring"

achingly slow progression often works like this: You move into a new street, kill most of the badguys, but miss one hidden somewhere and get killed. You go back to the last checkpoint (frequently an hour's play or so ago, there are no quicksaves) and replay the last few blocks of Mexico City having memorised where the enemies were hiding. You get to the point where you died, kill that guy who got you before and move to the next street, whereupon you get shot and repeat the process. This utter grind is personified in a later level where you are *literally* making your way uphill, dying and returning to the bottom to start over.

Prong Two: AI. Your crack Ghost team are actually utterly useless idiots and must be babysat and coaxed into action in the most infuriating way. They'll walk backwards around corners, go bizarrely out of their way to find the most awkward route to a designated location (meaning you have to spend ages mico-managing their movements in the Sat Cam view), pick illogical cover and more than once the psycho squaddies pushed *PCFormat* out of it's cover in order to reach somewhere they wanted to go. That's quite simply unforgivable. The only reason it didn't drop the score 20% than it did is that we'd argue *GRAW* is a game

to be played not with the rubbish AI, but with three of your mates online. The entire campaign is playable cooperatively and to judge it as a singleplayer experience is like reviewing *Battlefield 2* having only ever played it with bots. That said, a lot, perhaps even most people will play it offline first and for that the AI simply doesn't cut it. Grin has assured *PCFormat* that a patch is being released on launch day that addresses some AI issues but we'll have to wait and see for that. Not everyone will check for patches before playing…

And that's the real issue we have with *GRAW*. It isn't finished. It was already put back to the May release date from February but it clearly wasn't enough. Poor AI and instant patching are not the only evidence that *GRAW* isn't quite fit for duty. There are balancing issues, oddly incongruous texture and model deficiencies in an otherwise beautiful game that scream 'placeholder' and a raft of other minor niggles that could have been fixed, indeed were probably

meant to be fixed, if there weren't more important things needed to get the game working. It's a crying shame because Grin has performed some outstanding work throughout much of *Advanced Warfighter*. There are moments of real cinematic flair and gaming innovation (see the Aegia PhysX feature on p52 for some…) and in general it's a truly excellent game, but it could have been a truly excellent game in *total* and that's what's disappointing. It's a high 80s game, for the action, tension and environment, but it's let down by fundamental failures that force us to score it more harshly. It's a flawed spectacular of a game – a diamond far too rough around the edges to be considered perfect, but one that sparkles nonetheless. **James Carey**

The annual Mexico City power walking contest gets under way.

Needs	2GHz CPU, 1GB RAM, X800/6800 or equivalent 3D card
Wants	3.2GHz CPU 2GB RAM, X1900/7900 or wequivalent 3D card
Net gaming	LAN/Net. four player co-op, 16 player Domination

80% **PCF says…** "Superlative urban combat, held back by poor AI and some grinding levels."

Massive vistas like this one are among *Rogue Trooper*'s strong points.

Never turn your back on a Nort Republic soldier, unless you *want* him to shoot you.

Sentry guns are great fun, but talking ones are even better.

DNA DILEMMAS

Rogue Trooper

You've heard of the Blue Meanies? There is a second kind out there, and they need to be taught a lesson...

Price £40 **Publisher** Eidos **Developer** Rebellion **Web** www.roguetrooper.com

The phrase 'I am the law' should make you shudder with horror, but if it doesn't, you probably steered clear of 1995's *Judge Dredd* movie, keeping your nose firmly buried in the far superior comic. Shamed by that appalling day-glo ham-fest, *2000AD* disappeared from the big screen, seemingly constrained to the ink-and-paper format forever. But if this little gem's any guide, the shame was probably worth it.

Rogue Trooper casts you in the role of a genetically engineered, woad-blue

> ## "Rogue Trooper chokes on its desire to portray its environment"

survivor of mortal peril. As you drop-ship down to the paradise turned toxic hellhole, Nu Earth, the sky is lit by a yawning miasma – a black hole that blights the skies of the vast alien landscape. All manner of Hell rains down around you as dropships plummet to earth; Nort Republic soldiers erupt from

the ground and fall before your spray of bullets: it feels as close to a weird future war as you'd want to get.

GENE GENIE

Then things get really interesting. Once a trooper dies, his genetic data chip can be salvaged and carried in your backpack. Placed in your rifle, he helps you aim, while another resides in your backpack managing your inventory and item manufacture. You even get one of the blighters in your helmet. It's a unique concept, and a rare explanation for the

ON THE DVD

>> Screenshot gallery

BUY THIS IF YOU LIKE...

>> **Freedom Fighters** EA
>> **Republic Commando** LucasArts
>> **Second Sight** Codemasters

Flexible friends
You're never alone with a clone

After a few hours in the sweaty boots of a Rogue Trooper, you'll be carrying a virtual army of undead helpers who offer amusing banter, advice and diagnostics. Manage your power-up inventory via the handy Digipad (which incorporates Map, Manufacture and Upgrade facilities).

second-life phenomena of gaming; these guys will live beyond death – just as long as their genes are kept safe.

The much-touted stealth elements are unimpressive, but the all-out combat is challenging and fun. Positioning a sentient sentry gun, distracting enemies with a well-placed hologram and run screaming into battle guns blazing is just one tactic the advanced arsenal allows.

But *Rogue Trooper* chokes on its desire to portray the detail of its universe rather than refine the unusual game mechanics. Rebellion has crammed in loads of cutscenes, but they end up getting in the way. Interaction can feel clumsy at times, and some levels suffer from stifling, linear design, but if you're a graphic novel or action game fan, you could do worse.   **Mark Selby**

Needs 1.6GHz CPU, 512MB RAM, 128MB 3D card

Wants 2GHz CPU, 1GB RAM, 256MB 3D card

Net gaming Split-screen multiplayer

Discuss www.pcformat.co.uk/mag/rogue

79% **PCF says...** "It won't change the gaming landscape, but it's never less than fun."

IN THE GHETTO

City Life

Simmering civil unrest rendered in beautiful 3D

Price £30 **Publisher** Monte Cristo **Developer** Deep Silver **Web** www.citylife-game.com

Snobbery, one-upmanship and greed are the central pillars on which this game rests. That, and flashy looks. You can chose from all manner of tastily rendered geographical areas to found your own city on, and at high resolutions, watching the sun rise

ON THE DVD
>> Screenshot gallery
>> Playable demo

BUY THIS IF YOU LIKE...
>> **The Sims 2** EA
>> **Tycoon City: New York** Atari
>> **Sid Meier's Civilization IV** Firaxis

"Looks like it's been designed by Wall Street's Gordon Gekko"

on your own beachfront City Hall is downright inspiring. The coal-fired power stations belching fumes into the air mere yards down the waterfront do ruin the atmosphere a tad, but hey, this is a disturbingly great PC magazine, not your local Town Planning office.

MOVING ON UP
Where *City Life* attempts to break the mould is its much-touted class system. In the early stages, 'Have-Nots' and 'Blue Collars' shamble dejectedly between the shoe factory and the grotty bar you've so kindly deigned to invoke for them.

After a while, though, things start to look up. Gradually raise your city's profile and improve facilities and you'll attract an entirely new class of person. Before long, you'll

be demolishing Moe's Shootout'N'Grill, serving factory workers on the corner of Crap Street for 10 years, in favour what the game terrifyingly dubs a 'countercultural' bar.

Despite the lack of further enhancements, and the idea that, in order to succeed in this game, you have to pander to vile trendies, we enjoyed *City Life*. It's like a city builder that's been designed by *Wall Street*'s Gordon Gekko. Greed is good, but it's not enough for a big score.   **Alex Jones**

After admiring the palm trees and skips on the pavement, why not take in a show?

The countercultural bar even has a rooftop dancefloor. How achingly hip is that?

Needs 1.5GHz CPU, 256MB RAM, 64MB 3D card

Wants 2.5GHz CPU, 1GB RAM, 128MB 3D card

Net gaming None

70% **PCF says...** "A well-executed sim, on the whole, but it lacks genuinely unique features."

Fire Department 3
Price £20 **Publisher** Monte Cristo **Web** www.montecristogames.com

Fire is a powerful foe, and each blaze you face in *FD3* requires a different response. For example, metallic fires require you run like hell. For the most part, though, You must venture in and deal with them while also achieving secondary objectives, like rescuing civilians.

This is, despite appearances, an enjoyable little strategy game. Most of the fun is derived from using non-standard units, like the cherry picker, and the game is far

more than the boggo hose-waving lark we expected. Despite a slow pace, it's tense enough to warrant a play if you fancy saving lives instead of taking them.

Needs 1.5 GHz CPU, 256 RAM, DX 9 3D card (with pixel shaders)

Wants 2GHz, 512 RAM, 128MB 3D card

Net gaming Up to four players

62% **PCF says...** "Don't play with matches – play this."

Tabloid Tycoon
Price £10 **Publisher** Valusoft
Web www.valusoft.com

What we have here is a game which attempts to convey the unpredictable and ever-thrilling world of publishing in a point-and-click, *Sims*-esque way. Unfortunately, it's unremittingly awful (not to mention inaccurate).

Tabloid Tycoon basically consists of multiple layers of menus, each of which must be accessed just so that you can click the 'Advance' button, thus removing any shred of involvement. You could choose not to use the Advance button, but then you'd be stuck. *Tabloid Tycoon* is bad enough to put people off reading magazines for life.

Needs 800MHz CPU, 256 RAM, 32MB 3D card

Wants 1GHz CPU, 512 RAM, 64MB 3D card

Net gaming None

18% **PCF says...** "Like finding only *Nuts* and *Zoo* in a doctor's waiting room."

Take Command 2
2nd Manassas
Price £20 **Publisher** Paradox Interactive
Web www.paradoxshop.com

The cavalry charges, bayonets and handlebar moustaches are all here – yep, this is the American Civil War – or at least it would be if it wasn't buried beneath awful-looking graphics and a terrible interface. The main problem in the Civil War was poor troop maneuverability – something this game nails with ease.

Wheeling units around on the spot to face enemies is such a chore that you'll lose deliberately to watch them die. Leave this alone, unless you're a glutton for punishment.

Needs 1GHz CPU, 256MB RAM, 64MB DX9 3D card

Wants 1.8GHz CPU, 512MB RAM, 128MB DX9 3D xard

Net gaming None

41% **PCF says...** "A cumbersome and confusing affair. Order a full retreat."

When the tank just isn't enough, you need the eye (and a minigun) in the sky.

Destroying embedded enemy positions provides some of the biggest challenges.

In a brief departure from broken down streets, your troops visit a broken down monastery.

TOY GUNS

Full Spectrum Warrior
Ten Hammers

THQ's vision of the US Army is back for another tour of duty

Price £30 **Publisher** THQ **Developer** Pandemic **Web** www.fullspectrumwarrior.com

There's a fine line between relevancy and poor taste, and *Ten Hammers* bounces around it with abandon. Combining gung-ho Americans (all wholesome farm boys) with good ol' whingeing Brits, it's time for another jaunt in war-torn Zekistan.

The original *FSW* taught the youth of today all about Military Operations on Urban Terrain: army-speak for fighting in the streets. This sequel maintains that tradition of commanding your troops through multiple levels of broken down buildings and rubble-strewn plazas.

One of the drawbacks of the first game was its insurmountable odds. Those poor Zekistanis never stood a chance against the tooled-up Yanks. You were almost always the larger force coming up against little enclaves of resistance from one or two fellas with knackered AKs.

For the most part, that still holds true, but every now and then you'll find yourself knee-deep in insurgents, or 'Mujis' as the troops affectionately call them. Unfortunately for them, that usually only happens when you've got the opportunity to command one of the new mechanised units that are available

in *Ten Hammers*. Sitting in your tank, you can mow down insurgents pretty much at will: a ploy that exposes weak points in both the Muji tactics and the game's design. There's still no suggestion you're fighting against the odds.

ORDERS IS ORDERS
While the first game had some originality, offering you a smaller-scale RTS that made proceedings a little more immediate and personal, Ten Hammers is just going over old ground. Sure, there are new elements like the mechanised

**BUY THIS
IF YOU LIKE...**

>> Full Spectrum Warrior
   THQ
>> Brothers in Arms
   Ubisoft
**>> Commandos 3:
   Destination Berlin**
   Eidos

Corporal Cockney
Private Van Dyke, reporting for duty...

We're reliably informed by James 'Games' Carey (our resident weapons specialist) that neither the uniforms nor the Heckler and Koch rifles are standard issue for British Army grunts. Neither, it seems, are the hideously hackneyed creations that are passed off as British and Irish accents...

vehicles and the increased instances of SWAT-style manoeuvres inside buildings, but these make little impact on the slow paced gameplay.

The big problem with Ten Hammers is the absence of any freedom of expression. It's still obsessed with military correctness, and choosing the correct tactic is still your only choice. Catch 22, huh? As a game we want to be able think our way around a dug-in bunch of Mujis and not have to follow the same tedious scripted routes. Unfortunately most roads are blocked off with burned-out cars, offering only one or two ways to approach a problem.

Overall, little has really changed from the original game; it looks better, but if you've seen one bombed building you've seen them all.   **Dave James**

Needs 1.5GHz CPU, 512MB RAM, DX9 3D card

Wants 2GHz CPU, 1GB RAM, DX9 3D card

Net gaming LAN/internet

Discuss pcformat.co.uk/mag/tenhammers

70% **PCF says...** "More expansion pack than full game, without the same level of challenge."

Wonkers is a cuddly talking PDA. Honest.

It's not quite "the power of Christ compels you" is it?

"Look Colin, nobody likes a show-off, alright?"

CINEMATIC WANDER

Dreamfall
The Longest Journey

It's expansive, dramatic and pretty, but is this puzzler sequel a classic example of what happens when worlds collide?

Price £30 **Publisher** Empire **Web** www.dreamfall.com

Two things are certain. Funcom is brave, and Funcom likes to tell stories. These are, arguably, rare commodities in games development these day. Funcom was brave seven years ago when it created *The Longest Journey* with its hours of dialogue and cutscenes, plus puzzle-based, and occasionally surreal, gameplay. The result was a game, an *experience*, that many loved. Hugs all round.

It's been brave again with the sequel *Dreamfall: The Longest Journey*, which takes place 10 years after the events of

ON THE DVD
>> Screenshot gallery

BUY THIS IF YOU LIKE...
>> **The Longest Journey** Funcom
>> **Broken Sword: The Sleeping Dragon** THQ
>> **Fahrenheit** VU Games

the original game. In case you're worried that in these fickle times of flighty players, *Dreamfall*'s story would be dumbed down, fear not. It's all there.

PASS THE POPCORN
You guide the exploits of one Zöe Castillo, a resident of Casablanca circa 2216. Like *TLJ*'s heroine April Ryan, Zöe is adrift on the sea of life. Until, that is, she starts receiving spooky messages from a mysterious little girl asking her to 'save April Ryan' and gets thrown into the magical world of Arcadia.

Narrative-wise, *Dreamfall* isn't that forgiving if you haven't played the first title. But if you have, expect to meet up with several familiar faces, including April. That's one of the joys of the game. It's like meeting old friends.

Unfortunately, in its almost rabid desire to tell their story, Funcom seems to have neglected the fact that what it's creating is a game. *Dreamfall* is very linear: puzzles are extremely easy, so there's little satisfaction in completing them. Stealth and laughable combat sections are shoe-horned in with seemingly no real thought, and consequently, little challenge. Its worst

crime, though, is that towards the last third of the game, *Dreamfall* seems to forget you are there. Your role quickly degenerates from player to onlooker.

But what the game has got going for it is a great storyline, decent dialogue and above average voice acting. Lots of work has gone into facial animation, along with some gorgeous environments (although most of them are of the look-but-don't-touch variety).

This dichotomy of great story versus average-to-poor gameplay makes this game hard to call. Ultimately, though, *Dreamfall* is about the experience, it's about moving you, touching you, making you think. Its primary objective isn't to engage you as a gamer; it's to engage you as a human being. And that makes it worth your time. **Rhianna Pratchett**

Needs 1.6GHz CPU 512MB RAM, 128MB 3D card

Wants 2GHz CPU 1GB RAM, 256MB 3D card

Net gaming None

Discuss pcformat.co.uk/mag/dreamfall

75% **PCF says...** "Feel free to enjoy the ride, just don't expect to do much of the driving."

Hide and creak
Garrett has nothing to fear from Dreamfall

It's a mystery why there are stealth elements in Dreamfall at all, let alone why they are so easy. There's only ever one of anything to avoid, meaning King Kong wouldn't have a hard time staying out of sight. There are also 'HIDE BEHIND ME' objects around if you just don't get it.

Desperados 2
Cooper's Revenge

Gas capsules? We don't need no steenking gas capsules!

Price £18 **Publisher** Atari **Web** www.desperados2.com

Players must tiptoe until they're nose-to-nose with enemies to do, well, anything.

Having spent our formative years playing Cowboys and Indians with sticks in the playground, we were looking forward to this. Granted, the main characters are hopelessly stereotyped and wield
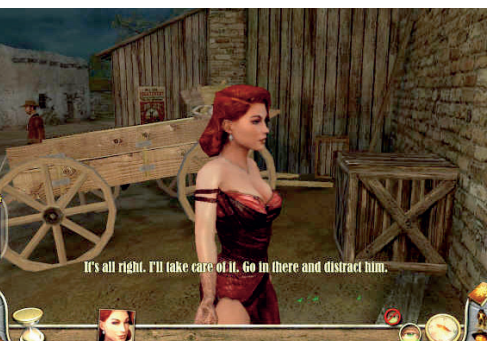
"A shot of your finest sippin' whisky, two six-shooters and a plot, please."

BUY THIS IF YOU LIKE...

>> **Commandos 2: Men Of Courage**
Eidos Interactive

>> **Outlaws**
Lucasarts

>> **Wanted Dead or Alive**
Fusion Software

"Fans of real-time strategy will be right at home here"

pistols with a mere five-foot range, but we retained high, misplaced hopes.

QUE?

Desperados 2 falls horridly short on all levels. Its attempt to combine a cowboy theme with the RTS action of *Commandos* feels like a match made by el Diablo himself. The two elements don't complement each other, especially when you're faced with missions that require any subtlety.

Western fans will know that John Wayne didn't need to stand right next to someone to shoot him, and gas capsules have never been an integral part of a frontier man's arsenal. While they may have been believable for a World War 2 spy,

they don't belong in the hands of a drunken, one-eyed, growling Wild West cattle rustler. The really irritating thing is that the game itself isn't bad. Fans of real-time strategy will be at home with the usual selection of character skills and missions often include a good mix of trial and error and forward thinking. The trouble is there's nothing new here, little that's not executed better by other games, and this ultimately leaves *Desperados 2* hog-tied.   **Joe Martin**

Needs 1.2GHz CPU 512MB RAM, 128MB 3D card

Wants 2GHz CPU 1GB RAM, 256MB 3D card

Net gaming None

61 % **PCF says...** "Confusing, often nonsensical execution, and a bit slow on the draw."

It may not be the most powerful gun, but you just can't beat a trusty flamethrower.

You can own several cars simultaneously, although the character classes are set up so that there's only so many you can play at a time.

SCRAPPY RACES

Auto Assault

The car's the star – and your enemies are roadkill

Price £30 (£9 per month) **Publisher** NCSoft **Developer** Net Devil **Web** eu.autoassault.com

This really is a tough one; a game so schizophrenic that it would take a reviewing tag-team of Jekyll and Hyde to truly do it justice. Summed up simply, it's a car-based action MMO – not *Warcraft* on wheels, but something that stands very much on its own… most of the time. When it stalls… well, we'll come to that.

Its killer feature is that you really get to drive. Cars bounce across the post-apocalyptic scenery, over jumps and down valleys, and turn enemy infantry into little red smears without even dignifying their presence with a bullet. Battles are frenzied, bloody conflicts – while the *Warcraft* crowd chats with Gwendoline the Green Elf, *Auto Assault* is

ON THE DVD

>> Screenshot gallery
>> In-game footage

BUY THIS IF YOU LIKE…

>> **City of Villains**
NC Soft
>> **Jumpgate**
Net Devil
>> **Car Wars**
Steve Jackson Games

busy unpacking flamethrowers and handing out XP bonuses for killing sprees. Buildings explode and rubble collapses everywhere. Neat.

Things go wrong when the shooting little scamp decides to don its father's MMO coat. It just doesn't fit. *AA*'s balls-out blasting suddenly runs headlong into an 80 level-long grind. The anarchic fun is interrupted by completely pointless character class restrictions, and the most pointlessly Byzantine crafting system ever to be left a total mystery by its manual. There's an endless range of twiddly things to press and fiddle with, which simply doesn't sit comfortably alongside strapping a machine-gun to your trunk and kicking ass.

Grouping is particularly troublesome element, both from players disappearing into the horizon before you can so much as type 'Hi!', and it's impossible to co-ordinate the inevitable sprawl of exploding special effects in any decent sized battle. If ever an MMO felt like a solo shooter, it's this one. No wonder Mad Max drove alone.

AA does a decent job of mixing some of its RPG elements with the action. Combat, for instance, pretends that you use your reflexes to unleash hell, but really relies on your combat stats and a die-roll to determine success. It's as lame as it sounds in one-on-one fights, but in practice, you

really won't notice when the battles get more epic. Most importantly, *AA* is good at keeping you in the action – there's no death penalty, and you can call home for a health top-up or a lift back to base at any point. The bulk of the action is PvE-based, but there are plenty of opportunities to take on human players instead of assorted aliens and mutants in the wastelands.

MAD MAX MISFIRE

Auto Assault can be fun. But it's also £9 a month, and that's where the problems start. All the MMO trappings it uses to try and keep you playing (not to mention paying) really only manage to trap its wheels in the mud. In short, it's picking the wrong fight – taking on MMOs on their own turf, instead of truly daring to be something different. It tries. Often it even succeeds. Just not enough to stop the sound of its stalling engine ringing as loud as the gunfire. **Richard Cobbett**

Road rage

Sorry I'm late – the traffic was murder…

Your car has one health bar, and when it's down, it's back to base. Other protection comprises shields and a power scheme that lets you push a bit more energy into offence or defence. If you're hoping to knock the bits off your rivals though, you're out of luck – cars spark, but hardly explode in a ball of fire like we'd hoped.

Needs 1.6GHz CPU, 512MB RAM, 64MB 3D card, broadband

Wants 2.5GHz CPU, 1GB RAM 128MB 3D card

Net gaming Massively multiplayer only

Discuss pcformat.co.uk/mag/autoassault

73% **PCF says…** "Tries far too hard to fit into a genre it should be tearing away from at 70mph."

The alien invasion fleet were bamboozled by mankind's well-organised offside trap.

DIGITAL KICKABOUT
FIFA World Cup Germany 2006
Glorious failure at the semi-final stage can be yours!

Price £30 **Publisher** Electronic Arts **Developer** EA Canada **Web** www.easports2006fifaworldcup.com

Transparent cash-ins make *PCFormat* sad. While *FIFA World Cup Germany 2006* is an excellent game, we can't help but feel played. The game is designed to milk the forthcoming tournament, but aside from the World Cup mode, with its natural

No footie game has kept up with Becks' haircuts, and this one's no different.

"The matches recreate the ebb and flow of the real thing well"

limitations, there's only a network play option available, and all-new the Global Challenge to keep you coming back.

REWRITE HISTORY
This new feature drops you into classic matches from modern World Cup history and behoves you to turn things around for various underdogs. These games vary from the Scots trying to score three against Holland in the second half in '78 to St. Kitts' doomed attempt to overturn a first half 1-0 deficit against St. Vincent in '82. These mini games offer a little extra value to the overall package, but you'll only dip into these when you're particularly bored.

The presentation is typically slick, and is marred only by the fact that you're stuck with the chunky menu system

purposefully devised for consoles and their low-res limitations. Getting into the World Cup itself, you do feel part of a larger tournament, with information from other matches streamed into the Cup menu. The matches are little different from the club iteration, and recreate the ebb and flow of the real thing well. It's a good representation of the sport, but *Pro Evolution Soccer 5* is still the benchmark for all PC football games. **Dave James**

Needs 1.5GHz CPU, 512MB RAM, DX9.0c 32MB 3D card

Wants 2GHz CPU, 1GB RAM, DX9.0c 64MB 3D card

Net gaming LAN/Internet

79% **PCF says...** "Plays a nice game of football, but it's a cash-in with a few choices to play."

Owning a Great Capital unlocks more advanced weapons of war for you to smite your foes with.

Each faction can unleash devastating special powers which, incidentally, look grand.

ELEVATED POSITION
Rise Of Nations
Rise Of Legends

With a noble heritage, this full blown sequel has a lot to live up to, so will the new fantasy bent satisfy the hardcore?

Price £35 **Publisher** Microsoft **Developer** Big Huge Games **Web** www.riseoflegends.com

Big Huge Games' previous title, *Rise Of Nations*, was a monster. An epic real-time strategy featuring real-life nations locked in struggles over eight epochs on land, air and sea, registering a fittingly gargantuan 95% in this very magazine.

Such a gaming giant casts a long shadow over this post-expansion pack sequel, which could so easily have chosen to stand on the shoulders of it's forebear by giving us more of the same.

Instead, *Rise of Legends* reins in the bold ambition that characterised its

ON THE DVD
>> Playable demo
>> Screenshot gallery

BUY THIS IF YOU LIKE...
>> **Rise Of Nations** Microsoft
>> **Age Of Empires III** Microsoft
>> **Perimeter** Codemasters

You're my hero
Warriors that come back from the dead

When regular troops simply won't do it's time to call on one of your heroes: units unique to each faction and capable of turning the tide of a battle. Here we've lined up a posse of Alin warriors who can upgrade special abilities – including calling up demonic alter egos – as they level up to become ever more fearsome battle beasts.

predecessor. And the result is a game that, while it doesn't register quite as highly on the Richter scale for sheer impact, is eminently playable and fiendishly compelling. *Rise Of Legends* also takes the series in a new direction with fantasy stylings, trimming your selection from 24 nations to just three races. You play either the Vincis, a steampunk aristocracy driven by invention and peopled by units inspired by Leonardo's drawings; the Alin, an elemental Arabian race who use spirits and magic in their attacks; or the hi-tech Coutl, who gather energy instead of wealth and pump out heroes inspired by Central American religious beliefs.

The result of this streamlining is a trio of factions that are far more developed – on the whole – than in *Rise of Nations*, and who all play quite differently thanks to their unique units. When we say 'play', we really mean 'fight', because the resource management element of *RON:ROL*'s progenitor has seen more chiselling than a Hollywood starlet's nose. The citizens element is no more, so now buildings are constructed automatically and you don't have to send people out to chop

wood. It's great news for the mentally infirm who were maddened while trying to protect idiot workers in *RON*, bad news for resource management purists.

ARE YOU POSITIVE?
The focus in *RON:ROL* has been shifted squarely and deliciously to a more confrontational and militarily intense approach. Underpinning this military assault is *RON*'s trademark emphasis on being positive. You must plough on to acquire new cities, where adding districts (to increase your capacity for troops, wealth/power generation and your ability to research new technologies) will be cheaper...

That doesn't always mean you have to fight, though – new outposts can be acquired through trade. Cold, hard cash has a role to play, you'll be pleased to hear. Inevitably, though, you will find yourself embroiled in epic battles that will drain your resources. Luckily, there's more than one way to skin a salamander here too.

The biggest tactical shot in the arm is the inclusion of satisfyingly nasty heroes who, along with mouth-watering super units such as the ground-shaking

Behold: the army of the future. They're still using elephants we notice.

Timomium: the good stuff that keeps your war machine ticking over.

The King Leviathan dwarves most buildings and causes not inconsiderable amounts of carnage. Don't mess.

Vinci King Leviathan, can unload inventive special weapons – our favourite being the exploding detonation team of clockwork men – to turn the tide of battle, even against the odds.

Such units are selectable while you retain control of a group of forces who, thanks to exquisite AI, you can leave to battle on in the knowledge they'll hold their own.

EVERY SECOND COUNTS

Overall *RON:ROL* is more polished than a clockwork man's codpiece and just as full of meaty surprises. A clutch of gameplay dynamics – from the short-term concern of nailing those pesky Alin raiders to long-term issues such as establishing a trade network and acquiring killer juggernaut units – combine with myriad bonuses and neat options for what is a very fulsome fighting experience.

All of this comes together beautifully in the multiplayer and quick battle games where you can push for various

flavours of map domination to unlock special powers to humble your foes. Achieve tactical dominance by assimilating several neutral structures, for instance, and you can call a temporary cease fire which is great for neutering attacking foes and even better

gold
PCFormat

"Resource management has seen more chiselling than a Hollywood starlet's nose"

for marching your troops into the enemy heartland unopposed.

The only slight imbalance in *RON: ROL* is that, for all the three factions are well-matched in military terms, the Coutl seem rather underdeveloped. Perhaps it's the fact that their hi-tech standing means they undertake little research, but they're definitely the poor relation when it

comes to the joy of unlocking more powerful units. The only other chink in the game's otherwise sturdy armour is the fact that that the stunted sense of scale hurts the game as an interactive narrative. You don't really feel you're rewriting history as you do in 'rivals' such as turn-based beast *Civilization IV* or even the original *Rise of Nations*.

That said, for some gamers the layers of complexity and scale of *RON* was simply overwhelming. Instead, *RON: ROL* is immediately and undeniably – dare we use the f-word in a magazine for grown-ups – fun. The rumble of distant battle provides a soundtrack for maps peopled with upgradeable units and buildings that are so desirable you'd be forgiven for skipping straight to the quick battle maps to unlock them. And this is definitely no mini game – *Rise of Nations: Rise of Legends* boasts the longevity of its forebear thanks to a scenario editor, a Vinci Caravan of multiplayer options and a trio of singleplayer campaigns.

So, while we clearly can't applaud the ambition of a game which is understandably over-shadowed by it's predecessor in that respect, praise be to Big Huge Games for producing another strategy feast in which every second, and every tactical decision counts. **Lee Hall**

Big guns are better
How to obliterate your foes by firing up the Vinci Doomcannon

1 Build a research lab and turn it into a telescope, which enables you to peer deep into enemy territory without risking precious units. Now spy a likely target.

2 Click on your aptly named Doomcannon, select your hapless quarry and hit fire. Don't worry – you've time to flick back to watch your city-sized weapon blasting.

3 Click on your target on the mini map to watch the shell homing in from on high and causing no small amount of devastation, plus a satisfyingly screen-filling kaboom!

Needs 1.4GHz CPU 256MB RAM, 64MB 3D card

Wants 3GHz CPU 1GB RAM, 128MB 3D card

Net gaming 1-8 players online

Discuss pcformat.co.uk/mag/riseoflegends

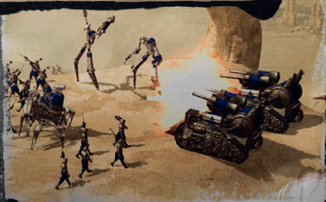**90**% **PCF says…** "Intense strategy monster that almost lives up to its predecessor's legend"

DEIFY ME

Black & White 2
Battle of the Gods

This time you've got a fight on your hand

Price: £20 **Publisher** Electronic Arts **Web** www.lionhead.com/botg

Gods, eh? They're like buses. You pray for one, then two come along at once. As the name suggests *B&W2: Battle of the Gods* sees you fighting it out, Old Testament-style, with another angry deity. Returning to the land of Eden, you discover that the almost extinct Aztecs have managed to create their own deity with a penchant for necromancy. Cue a darker world, with you on the back foot from the start.

The added dimension of another godly hand roaming the two new lands makes for a more tense affair. Unfortunately all the flaws from the original are still glaringly omnipresent – from the awkward mouse cursor to the tedious mini-games. Do gods really spend their precious hours making skeletons dance in time?

Harryhausen would be proud.

Needs	1.6GHz CPU, 512MB RAM, DX8+ 3D card
Wants	2GHz CPU, 1GB RAM, DX9 3D card
Net gaming	None

70% **PCF says...** "An edgier game, but it just can't shake its problems."

CLICK AND KILL

Act of War
High Treason

First there was Guy Fawkes, now you

Price £20 **Publisher** Atari **Web** www.atari.com/actofwar

What happens if you play a couple of day's worth of *Command & Conquer* then watch all four series of *24*? You get a paranoid little RTS called *Act of War*. The original game, *Direct Action*, appeared last year and was surprisingly well received. The game never aimed for the complex tactical approach of *Total War*, instead going for the chain of command style of receiving orders on the fly.

That hasn't changed with this expansion; indeed you begin the first of the 34 new chapters infiltrating a skyscraper's rooftop. The naval combat and countryside levels make a change from the urban warfare that ran through the original, but it's the engaging, conspiracy-fuelled storyline that keeps this feeling fresh.

Plenty of futuristic RTS joy here.

Needs	1.5GHz CPU, 256MB RAM, DX9c 3D card
Wants	2GHz CPU, 512MB RAM, DX9c 3D card
Net gaming	LAN/Internet, 2-8 players

79% **PCF says...** "An action RTS for all the budding Jack Bauers out there."

Holiday World Tycoon

Price £10 **Publisher** GSP
Web www.gsp.cc

Another *Tycoon* title offering to make you a megalomaniacal genius in the privacy of your own home. While most of the usual elements are in evidence, such as keeping your guests happy and the endless entertainment of creating your fantasy holiday resort, there are a couple of silly flaws. The frustrating bugs and glitches leave very little game to actually recommend.

Needs 1GHz CPU, 128MB RAM, 32MB 3D card

Wants 1.5GHz CPU, 256MB RAM, 64MB 3D card.

Net gaming None

48% **PCF says…** "Not quite the holiday from Hell, but close."

Bone: The Great Cow Race

Price $13 **Publisher** Telltale
Web cowrace.telltalegames.com

Forget *SiN* – *Bone* already did the epsiodic schtick last year. This second in the series, *The Great Cow Race*, doesn't disappoint and comes full of the same humour as the original. Telltale seems intent on making sure the series remains fun and consistent. You'll enjoy solving the puzzles and the story is bizarre enough to keep you clicking along happily.

Needs 800MHz CPU, 128MB RAM, 32MB 3D card

Wants 1.5GHz CPU, 256MB RAM, 64MB 3D card

Net gaming None

78% **PCF says…** "There's still life in the old series yet, it seems."

Taito Legends 2

Price £10 **Publisher** Empire Interactive
Web www.taitolegends2.com

Nothing beats recapturing those gaming moments you had as a kid and *Taito Legends 2* is packed full of memories. From *Puzzle Bobble 2* to *Space Invaders DX*, it's all there. Get misty eyed as you duck, shoot and maim your way through games that kept you mesmerised for hours. This collection of arcade classics has been put together well, with games that should appeal to all types. Plus you have to "insert a coin" each time you play. How warm and fuzzy is that? Enjoy.

Needs 1GHz CPU, 128MB RAM, 32MB 3D card

Wants 1.2Ghz CPU, 256MB RAM, 64MB 3D card

Net gaming None

70% **PCF says…** "A fantastic trip down memory lane."

The Secrets of Da Vinci

Price: £24 **Publisher:** Nobilis
Web www.nobilis-france.fr

Here we have yet another in the point-and-click renaissance – a genre with a loyal following. *The Secrets of Da Vinci* may not be one of the greatest, but it definitely has all the right elements. If you enjoy the horrendous fiction-lite of Dan Brown et al, you've probably bought this already. Besides, a cup of tea plus a conspiracy theory or two can hardly go amiss on a rainy day, can it?

Needs 900MHz CPU, 64MB RAM 64MB 3D card

Wants 1GHz CPU, 256 MB RAM 128MB 3D card

Net gaming None

73% **PCF says…** "Nothing special, but Da Vinci nuts will lap it up."

PCFormat
on the disc
The very best software and games

HIGHLIGHTS

Over There: Pilot Episode

From the creator of *NYPD Blue* comes *Over There*, a gritty drama following the lives of an inexperienced platoon and their sergeant as they come to terms with life in Iraq. See the first episode now.

On your disc

Full programs
Our discs deliver top-quality, high-value apps and utilities. Let us know if there's something you want and we'll do our best to get it for you.

Play the best games
Don't wait hours to download this month's best games demos. They're all here, right now.

New games for old
It's not all about the latest and greatest. Every month we have a selection of the best mods and add-ons for your existing titles.

Who needs manuals?
We want you to get the most from your free programs. *PCFormat* features more software guides than any other PC magazine in the whole wide world. Sometimes.

PLAY THIS

Condemned: Criminal Origins
Make your *CSI* daydreams a reality with this action thriller.

LMB	**Shoot/Hit**
RMB	**Block**
Shift	**Sprint**
T	**Forensic Tool**
F	**Torch**

Tomb Raider: Legend
Take Lara in hand with our aerobic playable demo.

LMB	**Shoot**
Space	**Jump**
TAB	**PDA**
E	**Interact**
G	**Lock**

FIFA World Cup Germany 2006
Play nice as either England, Germany, Mexico or the US.

Cursor	**Movement**
S	**Pass/Switch**
W	**Through Ball**
A	**Cross/Tackle**
D	**Shoot/Clearance**

Rise of Nations: Rise of Legends
Protect the city of Azar Harif in fantastical RTS style.

LMB	**Select**
RMB	**Action**
MMB	**Pitch Camera**
MSWheel	**Zoom**
C	**Toggle Camera**

GTI Racing
Get ready for those summer cruises in your Chav GTI...

Up	**Accelerate**
Down	**Brake**
L/R Cursor	**Steering**
Space	**Handbrake**
N	**Nitro**

REGULARS

Buyer's guide
The minefield of PC hardware can be a daunting place, but fear not, our comprehensive buyer's guides make it easy.

Benchmarks
Every other day it seems like there's a new graphics card released, our independant benchmarks keep you up to date with what's hot.

Latest drivers
Getting the optimal performance out of your machine is the goal of any PC owner. Keep your rig frosty with all the latest drivers.

All the apps you need
From antivirus to spyware scanners, we've got all the apps you need to ensure the smooth running of your system.

Have a go at the beautiful game with our demo.

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workshops
Get more from your PC today

OUR PROMISE Every month we bring you the biggest and broadest selection of tutorials around

100

Serif PagePlus 8
Create better leaflets and presentations with tips from the top – we take you through the semi-mystical processes of magazine cover design

DO THIS
Let those creative juices flood out

100 Creation theory
Give that family newsletter a professional tinge with our guide to *Serif PagePlus 8*.

104 Collectibles
We show you how *Game Collector Pro 2* can keep tabs on your games library.

106 Magic music
Here's the simple way to make beautiful music with our *MAGIX Music Maker 11* guide.

108 Space. It's big...
Let *Deep Space Explorer* take you on a journey through time and space.

110 Mobo activity
How to swap in major pieces of hardware without the hassles of Windows re-activation.

112 Get a head in Quake
Part three of our *Blender3D* guide introduces the joys of putting holes in your head.

106

MAGIX Music Maker 11 Silver
Share your vision of the world through the medium of song with our guide to pop perfection and *MAGIX Music Maker 11*.

Full software

108

Deep Space Explorer
Climb on board your very own spaceship and travel to the far reaches of the known universe with this 3D space map.

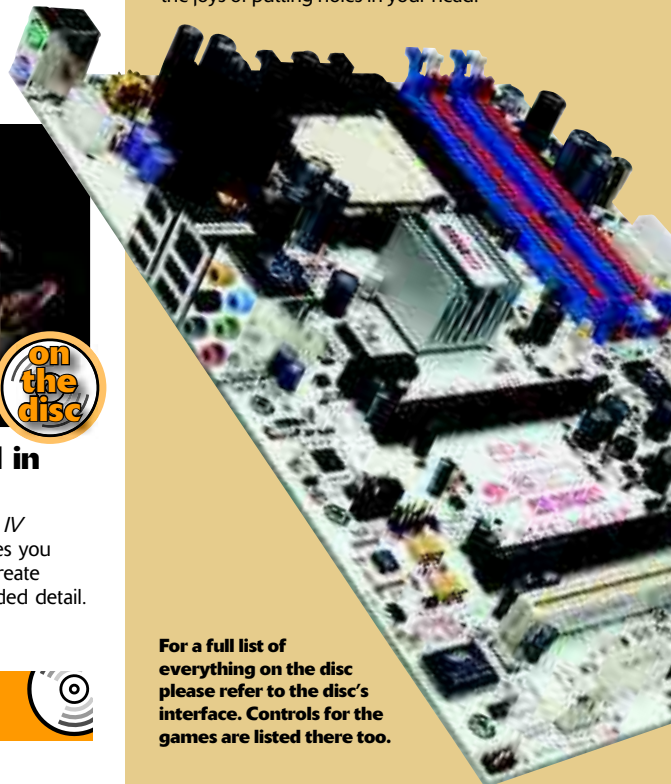**Full program**

112

Make a model in Quake IV
Part three of our *Quake IV* modelling tutorial teaches you how to use *Blender* to create different layers of wounded detail.

Software toolkit

ON THE DISC
Check out the 'on the disc' boxout in each workshop to find out what other relevant programs are waiting on the *PCF* disc, as well as how to install or upgrade new apps.

For a full list of everything on the disc please refer to the disc's interface. Controls for the games are listed there too.

Workshop

Andy McGregor takes you through some of the basic principles of magazine design

There's a right and wrong way to go about newsstand design, especially when it comes to covers, and getting it wrong can cost you a fortune. The key to successful cover design is to sell the product, in this case the publication as a whole. An outrageous cover with little legibility can occasionally work, but depending on the market your product is aimed at, that sort of approach can fail more often than it succeeds. For PC enthusiasts like ourselves, the cover of a PC magazine needs to achieve many things. A broad spectrum of readers' needs must be catered for, sometimes leaning more towards those interested in hardware, for example, and the main cover image must reflect the core values of the magazine it's promoting. Images on the periphery can be more specific, and relate to stories inside the magazine, while the main image is used to present the magazine to potential buyers as a whole. It's like an image of a house for sale in an estate agent's window, and it's not until closer inspection you can find out about the contents.

RUN FOR COVER
The decision-making process for the cover image, in our case, spans weeks, and one image is selected from hundreds of photographs. The planning process involves choosing the model's clothing, the colour of the backdrop and the colour of the models hair amongst other things. All these factors need to be considered before the model even arrives for the photoshoot, and the cover has to be shot in just a few hours, so it's not as easy as it may seem at the outset.

Have your say forum.pcformat.co.uk

Practice with Serif and one day you'll be as good as us.

Design a magazine cover

Cover design is far from straightforward.
Andy McGregor shares a few tricks of the trade

Home desktop publishing is a discipline that many people use to produce newsletters and fanzines, and even CD or DVD inlays. Packages such as *Adobe Creative Suite* and *QuarkXPress* are beyond the means of most users, but *Page Plus 8* is totally free and on this month's coverdisc. All you need to do is run the installer. You'll need to register it by calling the number referenced on the interface, and then getting up and running is easy, and you'll have all the tools at your disposal to recreate our recent cover. While the specific files

are not needed for this tutorial, there are many places you can find free images to use in your designs. Websites such as **www.sxc.hu** is a photo exchange site where members can up and download images from other photographers all around the world. Some experience of photoediting will come in handy for certain aspects but a complete novice at using DTP packages should walk away with a good looking end product.

There's a stigma attached to home desktop publishing that is hard to avoid, and having come

across many home produced newsletters and leaflets shoved through our letterboxes they mostly look dull and uninspiring using clipart dusted off from some floppy disks from the 1980s. Typefaces are a problem too, with the majority of the world's home-publishers seemingly quite happy to produce all their material in Courier or Times New Roman. The internet can be blamed for this, and googling for DTP newsletters brings up tutorials advising to use these and similar typefaces for the sake of maximum legibility. We're aiming to help right some wrongs on this front, and give you some tips that will make your designs stand out.

THE THREE DEGREES

There are three aspects to consider when laying out a magazine cover. The masthead at the top contains the logo and a pithy explanation of what the magazine is about. This area needs to be relatively clear of other material to enforce brand identity. Secondly, there's the majority of the document containing the main image and the headlines relating to various parts of the magazine. For a cover image to stand out, especially if using a model – eye contact with the reader is desirable. Correct weighting of typefaces gives the information you include on the cover a hierarchy, and should force the reader to scan the coverlines in a set order. Use too thin a typeface in the wrong place, and the most important information can get lost as the human eye is more than likely to get drawn to bigger and bolder text. Finally, there's the footer at the bottom of the cover, which can be used for short but snappy text detailing other articles.

There's a few ways of making sure your document looks as professional as possible. Keeping a close eye on the kerning (the visible space between characters) can make or break the whole design. A lot of free typefaces have too much built-in character spacing and this can be altered easily through *PagePlus 8*'s ChangeBar.

Altering the spacing between lines of text can also give a much clearer, more pleasing look to the overall design. We'll explore more of *PagePlus*' features in the walkthrough.

Create your cover

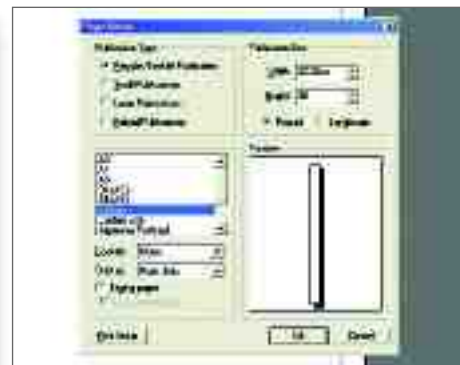## Getting to grips with PagePlus 8

1 When first loading *PagePlus 8* you're offered a variety of options of how to progress. Click on **Start from scratch**, then in the next screen click **Custom Page Setup...** Here we'll define the dimensions of the page so insert **22.2cm** in width and **30cm** in height then click **OK**.

2 Next, we'll place the main model image. You can do this through **Insert→Picture→From file...** or **[Ctrl]+[G]**. When you've selected the picture, you can draw the picture box at a constrained aspect. Cover the entire page with a box from the top-left corner to bottom-right.

3 With the cover model in place it's time to place the logo. The cover model picture is made up of two images, where the second image is placed above the logo. Lining these up is crucial as to produce a professional look when the final document is printed.

4 Click the **A** icon on the toolbar on the left of the screen and click on the document. The text you type in here can be styled through the list of fonts at the top as can the size of the typeface. The ChangeBar can be used to change the leading between the lines of text.

5 After adding text, it's inevitable some will need to be tweaked and resized to fit correctly on the page, and around the images. The ChangeBar allows you to tweak settings such as the kerning between characters and the height and width of the typeface.

6 Go over the document looking for errors, before selecting your output method. Professional mag covers are printed by specialist companies, but it's likely you'll use an inkjet or laser printer. Select **File→Print Preview**, and if you're happy, hit **Print**.

Turn the page for the rest of the tutorial...

How it works…

Most desktop publishing programs are complicated, powerful applications, but PagePlus 8's interface is easy to navigate…
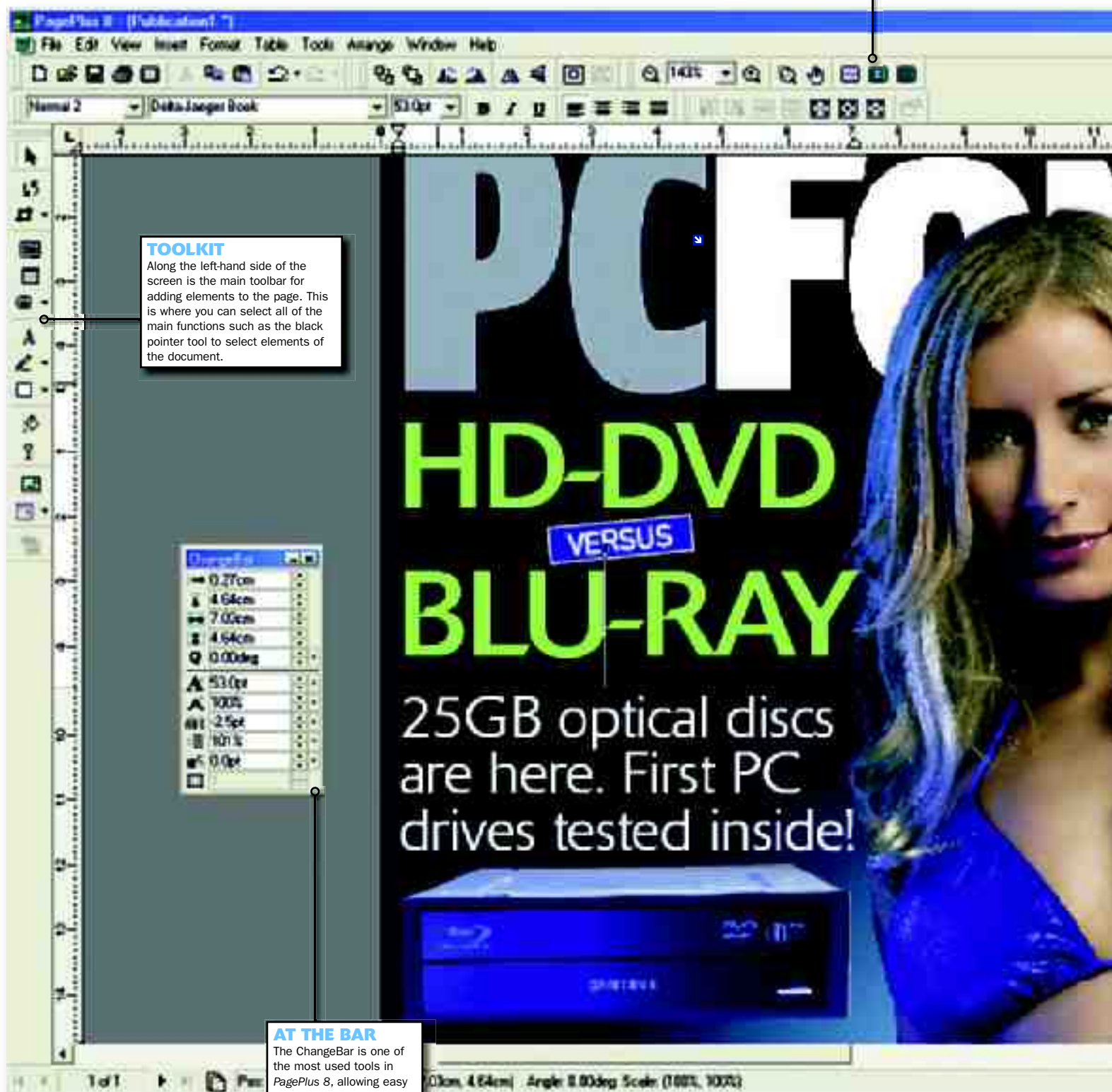
MENUS
At the top of the screen are the menus, and also the other toolbars with easy to access buttons. The toolbars can be moved around so the user interface can be tweaked to your liking.

TOOLKIT
Along the left-hand side of the screen is the main toolbar for adding elements to the page. This is where you can select all of the main functions such as the black pointer tool to select elements of the document.

AT THE BAR
The ChangeBar is one of the most used tools in *PagePlus 8*, allowing easy alterations to images and text through a simple method of definitive numbers or, alternatively, a slider bar system.

The wizard
Quick, easy web pages

1 Select **File→New** and select the wizard from the pop-up screen that appears. Select the **Website** option on the left-hand side, then **Personal**. You can now chose to use one of the designs that appears.

2 Once opened, *PagePlus 8* is in web publishing mode and all the elements can be edited to suit your needs. Pages are designed in the same way as you would design a standard printed page only here you can publish them to the internet.

3 Go to the **File** menu and select **Preview Website in Browser** and click **OK**. As this is just a standard template provided by the wizard it looks the same as the version in *PagePlus 8*, but with this option you can continue to check your design works in a browser as you work. **PCF**

Collectormania

Alec Meer gets his games library in order with *GameCollector Pro*

Without going an unsavoury degree of Nick Hornby on you, men (many women too, but especially men) do like to collect things. And when it comes to the PC, the world's longest-standing games platform, there's a whole lot of things to collect.

Any seasoned PC gamer will have dozens, if not hundreds, of titles clogging up all available shelf space, from that copy of *Baldur's Gate* with the cloth map and fake currency to a whole bunch of *Need for Speed* games you played once and then realised that, not being a bug-eyed skinhead in a baseball cap, they weren't actually for you.

ORGANISE CHAOS

Game Collector 2 Pro is a simple-to-use yet powerful database application, designed specifically for keeping tabs on what's in your sprawling game library and, more importantly, what's cop and what's rot. Once all your beloved games have been catalogued, you can use it to keep track of each priceless gaming treasure. If you love your PC games obsessively, this could be just what you're after. Oh, and you'll need to nip to **www.bluesquad.co.uk/future/game/register** before you install to get your registration code, and finally bring some much-needed order to that vast wobbly stack of boxes and discs in the corner of the room that you like to refer to as your games collection. **PCF**

GameCollector Pro's database will keep your games in order.

> **"If you really love your games, this could be what you're after"**

ON THE DISC

Collectorz.com Gamer Collector Pro 2.0
Before you can install *Game Collector Pro*, you must first register online to obtain the unlock key. Register online at **www.bluesquad.co.uk/future/game/register/**. Free registration offer ends November 2006. **www.bluesquad.co.uk**

Adventure Game Studio
If you've run out of games to enter into *Game Collector Pro's* database, try your hand at creating your own, with this complicated but rewarding point'n'click adventure game designer. **www.adventuregamestudio.co.uk**

Stop it and tidy up

Sorting your *Planescapes* from your *Planetsides*
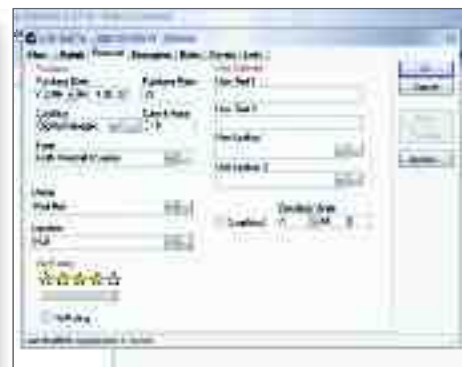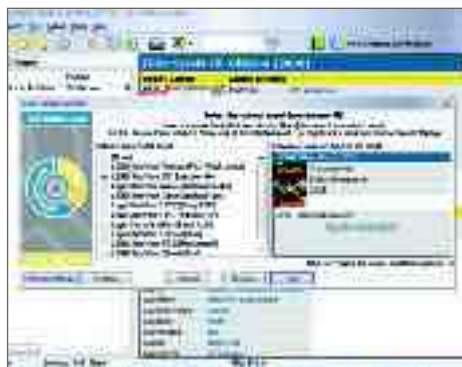
1 To add the first game in your mighty archive, nip to **Edit→Add Games Automatically**. You can type in the name or partial name of the title in question, and *Game Collector* will search Collectorz.com and Amazon for it, duly adding in developer details and the cover art if it's found.

2 Of course, you'll want to add your own information, and you can do that by right-clicking on the game's title, then choosing **Edit**. Here, you can give it a star rating, mark where and when you bought it from, when you completed it and what condition it's in.

3 If you want to lend a game out, you don't need run the usual risk of it never coming back – the light-fingered offender's name can be recorded forever by clicking on **Loans→Loan item**, then marking the who and when. Once it's back, just click on **Loans→Return Item**.

4 The venerable stuff isn't online, so you'll have to go to **Edit→Add Games Manually**, and enter all the info you know about your game. You can then submit it to **www.collectorz.com**, so the next person entering *Moob Wars III* can fetch the notes automatically.

Alex Jones leaves the hit-and-miss world of the unsigned band, and looks to the web

The recent success of the Arctic Monkeys (who, for those of you who've been living under a rock, reputedly shot to fame thanks to their fans spreading the word through www.myspace.com) proves conclusively that these days, record company scouts don't need to go to gigs to spot the next best thing: Google can sometimes be just as useful.

GET OUT THERE

If you're hellbent on raising your music's profile online, you should start off by registering with one of the plethora of unsigned MP3 sites lurking out there, like www.isound.com or www.mp3unsigned.com. These sites contain information on landing gigs, getting signed, tips on approaching managers and record companies and all kinds of other useful facts that budding musicians shouldn't be without. There are even sites from which you could sell your music, such as www.arkade.com.

If you're more interested in collaborating with other musicians in your local area, one of the best sites we've found is www.formingbands.com. Simply tap in a few details (where you live, what you play and what kind of band you're in or would like to join), and you'll soon start to receive cheery emails containing contact details for relevant players in your area. The site also contains links to local gig venues, so you can start to play your music in a live context if you want, or you can just share music and ideas through the web, of course.

Forming Bands is one of the foremost forums for unsigned bands and artists.

Have your say forum.pcformat.co.uk

Make music with MAGIX

PCF's bustling offices are staffed almost entirely by closet musos. Barely a day goes by without 'a frank exchange of views' about the merits of one artiste or another. Alec, for example, remains in the thrall of The Arcade Fire, while to question the merits of Kate Bush's oeuvre within earshot of Adam could possibly result in the swift arrival of a P45.

We're sure the same situation pervades in offices all over this fine land, but the question it indirectly poses is this: is *PCFormat* itself actually in possession of any musical talent, or have years of 'reviewing' the work of others left our creative and artistic faculties dull and useless? Can a computer help turn said talentless noise polluters into musical svengalis? Probably not, but join us anyway, as we attempt to create a modern pop masterpiece using *MAGIX Music Maker 11*, a demo of which you'll find on this month's coverdisc. After three then, everybody… **PCF**

Note-perfect mixes

Drag-and-drop all your way to pop stardom…

1 The first thing to do is drop some loops into the main window. Go to the **Media** window at the bottom, then click **My Audio Video**, choose a genre, and then click on a loop. If it's what you're looking for, drag it into the project. Repeat this until you've got a few loops running simultaneously.

2 All the loops are in different keys, but are numbered to match each other. So, for example, if you drop **elecsolo1** next to **clavinova1**, they'll play in harmony, and you'll be spared a terrifying, discordant mess. Unless, of course, said mess is what you want.
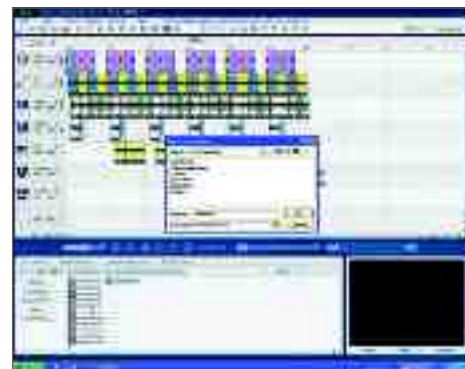
6 So, your backing track's finished – all the key changes you want are in place, and the effects you've added make you sound like a musical genius, yes? Good. Go to **File→Export as Wave**, and your mix will be squished down, and placed in the **My Audio Video** folder.

Upgrade

Extra features can be unlocked within the application by purchasing an activation code for MAGIX Music Maker 11 e-version, bought for just £21.99. Details appear within Music Maker 11 when you quit the app.

www.magix.com

Guitar guidance
Keep an eye on instruments you're using here.

Take control
All the instrument types are a different colour, for easy reference during mixing.

From the top
The transport controls are similar to those in Windows Media Player.

On the level
You can tweak EQs for each individual sample, or entire tracks, using these hi-fi-style controls.

Cause and effect
Use these delay, reverb and filter controls to add professional-sounding polish to your recordings. Or terrifying 'whoosh... blarp!' noises, if you like.

ON THE DISC

Audacity
This is a multitracker, similar in some ways to *Music Maker 11*, which is handy for mixing your completed tracks together, compiling podcasts and the like.
www.audacity.com

Alive WMA MP3 Recorder
Before you can start monkeying around with sound files in *MAGIX Music Maker 11*, you need to convert them into a compatible format, which is where this little app earns its corn...
www.wma-mp3.com

YamiPod
iTunes is famously cantankerous about moving files between iPods and other machines, but *YamiPod* presents an easy, drag-and-drop method of sidestepping the all-seeing Apple program.
www.yamipod.com

OTS CD Scratch
If the business side of one of your favourite CD is covered in scratches, this little application will (in most cases) extract the precious sounds encased within it.
www.cdscratch.com

3 Now let's have some fun. Pick a drum loop, right-click, select **Destructive Effects➔ Gater**. Then set the **Gater rhythm** to **Random**, and click **OK**. This cuts a loop it into sections, playing them back in a random order to create a unique loop. Behold! Polyrythmic madness!

4 However, since we're Hendrix-fixated, we're going for big, noisy rock, and no Vietnam-era classic worth its spangly headband would be complete without backwards guitar. So, select a guitar loop, go to **Destructive Effects** and hit **Reverse** to evoke the spirit of '67, maaan.

5 Next, why not try adding some reverb to elements to give them a spacious, more professional, altogether less rubbish sound? Right click on a loop, select **Reverb and Delay**, hit **Play Obj.** and adjust the controls until you arrive at a nice, rich sound, then hit **OK**.

7 Open a new project, and drag your fresh WAV into it. Congratulations, you've just completed your first mixdown. Now all your previous work only takes up one track, leaving you with room to build on your ideas in the other seven. So go nuts – chuck some more samples in there.

8 Once you're happy with the musical side of things, move on to video. Open the Video tab on the bottom right-hand menu, and drop in transitions as you have been with sound loops. Arrange them until you like what you see in the **Preview** window when you hit **Play**.

9 Once the video and audio work together nicely, you can choose **File➔Export project**, and burn the whole thing to a CD, or alternatively, you can compare your finished masterpiece with other *MAGIX* users in the forums you'll find over at **www.magix.com**.

Travel through space

## James Carey gets lost in the void with *Deep Space Explorer*

You don't need a Police Box to work out your Time And Relative Dimension In Space. *Deep Space Explorer* is the perfect little application for budding astronomers everywhere to live out their interstellar travel fantasies.

It's less an encyclopaedia, more a 3D map of the universe. Each and every major object in the known cosmos is in here, but don't expect reams of information on each one, just the bare essentials like magnitude, distance from sol and – here's the interesting bit – distance from you. *DSE*'s main pull (aside from various bodies' massive gravitational fields of course) is the fact that it casts you in the role of space traveller. You're even given a spaceship, which is capable of faster-than-light travel. you'll be relieved to hear, as no-one wants a program that takes a million years to use.

STAR GAZING

You'd be hard pushed to find an application as comprehensive in scale as *Deep Space Explorer*. You can literally fly from the beginning of time and space right into the here and now, because, as everyone knows, the deeper into space you look, the further back in time you see. Enjoy. **PCF**

> **"You even get your own faster-than-light spaceship to fly around in"**
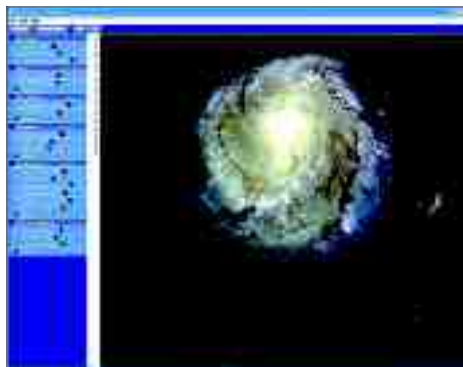
1 The first screen you'll see in *DSE* is this view of the Milky Way, 0.11 million light years from the Sun. You can return to this location at any time by clicking the **Home** button in the top-left. We're going to navigate our way back to here from the Moon, taking the scenic route…
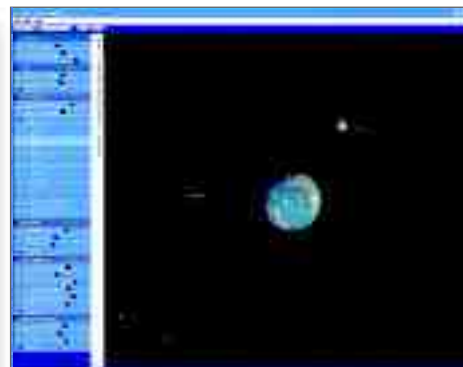
2 From the panel on the left, locate the **Solar System** sub-menu, and open the **Explore** tree by clicking on the **+** next to it. Click on **Earth** and you'll be instantly beamed to our home planet. You should also be able to see the moon from this viewpoint.

3 **Right-click** on the **Moon** object and click **Centre on Moon** from the drop-down menu. Now zoom in by clicking the **down arrow** on the top-left. When you're close enough for a good look, you can rotate the view around by **left-clicking** and dragging the mouse.
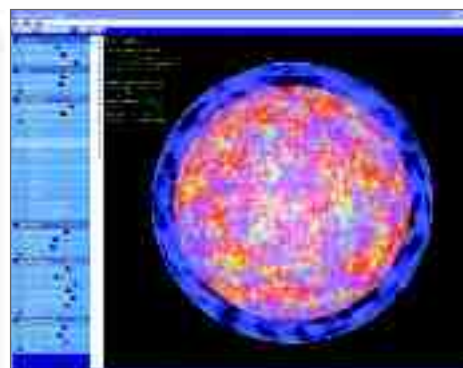
4 Now click and hold the **up arrow** on the top-left. Hold it down, and you'll zoom all the way out through the solar system, away from the Milky Way, out past the CMB (Cosmic Microwave Background) and eventually arrive at the edge of space and time for the big bang. Cor…

Space race Finding your way around the cosmos

1 Now it's time to try out your spaceship. From the panel on the left locate **Saturn** and click it to beam there instantly. Now click the **Spaceship** button on the top left. You'll lose Saturn instantly because the accelerator is on by default so hit and hold **[1]** on your keyboard to slow down.

2 Dab the **[1]** and **[2]** keys until your speed is 0.000xc and rotate the ship with the **cursor** keys until you can see Saturn. It should still be highlighted from the instant jump you completed in the previous walkthrough. Line yourself up with the planet and then press and hold the **[2]** key.

3 Notice that your ship has momentum. The lower bar represents relative acceleration while the top bar measures relative speed. It's the top bar you'll want to keep an eye on as you approach Saturn, slamming on the brakes early enough to counter your ship's forward momentum.

4 As soon as you get within about 0.300au of the planet, you'll start to notice the moons appearing in your viewer. Now's the time to slow the ship right down, so you can begin to fly around between them, exploring the rings and 19 moons that make up Saturn's own system at your leisure.

Windows Product Activation strategy just doesn't make any sense, rues Alec Meer

As the retailer chagrin surrounding the delay of Vista until early next year (see last issue) suggests, the vast majority of Windows-based cash flow doesn't come from folk like you or we who sensibly buy boxed copies of a new Microsoft operating system, but rather from it coming pre-installed on new systems. In fact, a new version of Windows plays a very big role in flogging new PCs in the first place, as its new look is often what fools… er, *convinces*… the less tech-savvy that the new system they've spotted in PC Hyberglobalmegamart on the high street must be at least 10,000 times more powerful than their old one.

STARTING AGAIN

That being the case, it's salt in the wound that us poor schmoes have to suffer the ignominies of Windows – and Office – reactivation whenever we make major hardware changes, such as replacing the motherboard. In most cases, we'll have to actually ring up Microsoft and sit through the endless automated messages to get our OS re-activated. It's maddening because it's not really there to stop you lending your XP CD to your mate at work, but rather to stop insalubrious retailers from only licensing one copy of Windows and installing it on every PC they sell. We might feel like we're being punished for the occasional light bit of personal software piracy, but really we're suffering for someone else's financial indiscretions.

The spectre of cumbersome, error-prone reactivations haunts the move to Vista.

# Fit a new motherboard*
*without reinstalling XP

The ever-changing pinouts of processors isn't solely to increase performance – it's also to swell the diabolical coffers of the PC component industry. Set your sights on that new Athlon 128 FX-90 chip, and you'll shortly discover it won't fit in your existing motherboard, so you have to upgrade that, too. Likely you'll then discover it needs a different type of RAM – end result, a whole lot of wonga widdled away. The final insult is discovering that you can't plug your old hard drive, with its existing XP installation, into your new rig, as MS' finest will in most cases refuse to boot, presenting you instead with a stubborn blue error screen, which usually does mean perma-death for the OS.

Mercifully, there's a way around this. It's not guaranteed to work perfectly every time, but if they remove the need for a complete reinstall, it's information well worth being armed with. **PCF**

Motherboard maintenance
### Upgrade without baffling your OS
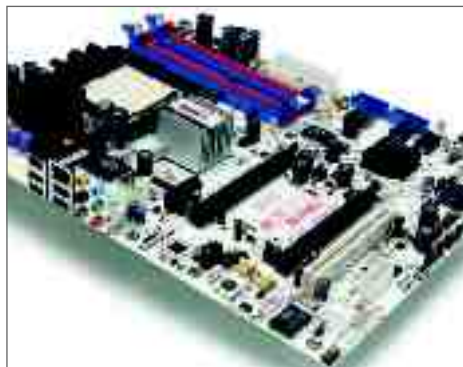
1 Windows' ire at encountering a new mobo occurs because of the hardware abstraction layer (HAL), a collection of drivers and APIs loaded before the core OS. Change the mobo, and it will persist in loading the identifying software for the old board, resulting in all manner of conflict errors.

2 The first step is to dispose of as many complications as possible. So, before you even open the new motherboard's box, remove from your existing rig any non-essential components, internal and external, such as sound cards or card readers, then boot into XP as usual.

"Set your sights on an Athlon FX-90, and you might need a new mobo too"
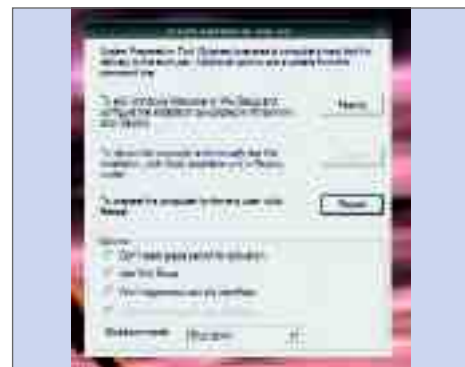
6 Blood chilled yet? It shouldn't be – this bit's easy. Double-click **sysprep.exe** and then **OK**. This app wipes Windows' memory as to what hardware is in the PC, forcing redetection upon a reboot. On the next screen, ignore all the text and simply click **Reseal**, and that's it.

Before you begin
Essential backup practices, just in case…

1 Under **Start→Accessories→System Tools**, you'll find the File and Settings Transfer wizard, which will archive your XP install settings. It'll also grab your My Documents folder, but won't back up apps. So make sure you've got your *Office* install disc…

2 The ideal way to do it is to splash out on a retail app such as *Acronis TrueImage*, which will create a clone of your hard drive. There's also a slew of free alternatives available, such as *DriveImage XML* (on the DVD and online at **www.runtime.org/dixml.htm**).

3 Step 1 requires another XP machine to access your files, while step 2 can't restore a disk image onto the drive you're running it from. So, the third way is to manually copy vital data to CD-Rs. Obvious, but useful if you can't get your own PC working again.

ON THE DISC

DriveImage XML
If you only backup individual files, you'll never quite get Windows back to how you left it come reinstall time. *DriveImage* will make an exact clone of the contents of your drive. **www.runtime.org/dixml.htm**

XP Syspad
A handy app that lets you tweak Windows' hidden settings, find out your IP address and work out what your XP and Office product key is if you've lost the original disc. **www.xtort.net**

PCMark 05
If you've just upgraded your PC, revel in how much faster than the old model it is by running it through the latest batch of benchmarking hurdles. **www.futuremark.com**

Emsa DiskCheck
Ensure that your hard disks and optical drives are running tickety-boo post-upgrade, or alternatively, you could use *DiskCheck* to benchmark that shiny new SATAII HDD against your 4GB SCSI model. **www.e-systems.ro**

3 Problems arise due to conflicts with IDE and SATA. Go to **Control Panel→System→Device Manager→IDE ATA/Atapi Controllers**. For each entry, **right-click**, choose **Update driver→Install from list→Don't search, I will…** then **Standard Dual Channel PCI-IDE Controller**.

4 You should now uninstall any graphics drivers and the NFORCE/VIA/etc mobo driver bundle. If you have everything backed up), you could attempt the motherboard swap, then simply boot into XP and pray. It may just work, but there's still a strong chance of nil bananas.

5 Or, grab your XP CD, browse to **[CD drive}:\ SUPPORT\TOOLS** and open **deploy.cab**. Copy **sysprep.exe** and **setupcl.exe** to your desktop. If you don't have the CD, download the files from **tinyurl.com/3jv9n**. Be warned – you will have to complete a Microsoft Genuine Advantage check.

7 The next stage is to do the physical swap. If you don't know how to do that yourself, you probably shouldn't be reading this. Then, boot up – nine times out of 10, XP will load up as you left it, and cheerfully ask for drivers for the new hardware. You'll also need to re-activate it.

8 Though *PCF* hasn't known sysprep to fail, it isn't guaranteed. If you want to play safe, you can perform an in-place upgrade. Swap mobos, set the BIOS to boot from CD first, bung your XP CD in, enter your key, choose **Install**, select your existing install and answer **Yes** to opt for repairs.

9 The XP install process will reset most settings, which doesn't take as long as a complete reinstall, but isn't far off. All your apps and documents will remain intact, but you'll need to reinstall drivers and download Windows updates; still, it's better than doing it from old CDs.

Ben Harling reveals the history of Blender, the app that makes our tutorial possible…

The fantastic open source 3D program, **Blender**, has gone through many incarnations during its long history, and has become a testament to the the power and popularity of the open source movement. Strangely, it actually began life as a commercial product, developed by Dutch software house **NeoGeo**, under the creative direction of co-founder **Ton Roosendaal**. NeoGeo quickly became a very successful software producer, and decided to create its own bespoke 3D toolset, which was used for creating in-house content, and sold separately under a sub-division of the company, called NaN technologies. The first release of **Blender**, entitled **Blender Publisher** was enthusiastically adopted, and quickly developed a community of avid users. Sadly, it was by no means perfect, and its shortcomings, including bugs and unfinished features, led to some dissatisfaction with it as a full-priced 3D app. However, the momentum created by its initial popularity was too much to let the project die, so, in 2002, Ton started the **Blender Foundation**, a non-profit organisation,dedicated to providing **Blender** as a free app. The first task was to purchase the source code from NaN's investors. **Blender** was then released under the GNU Public Licence on 13 October 2002, and since then has been developed and improved to a staggering degree by a worldwide network of dedicated programmers. In its current incarnation, **Blender** rivals the stalwarts of the 3D industry, and is fast being adopted by software houses and special effects companies all over the world.

Blender has evolved into a massive, feature packed 3D über-app.

Have your say forum.pcformat.co.uk

Make a mod for Quake IV

part 1 2 3 4

This part of our tutorial series will show you how to 'unwrap' your high poly model using *Blender*, and deal with the different layers of texture that need to be applied to make the model work in-game.

In *Quake IV*, bump and normal mapping is the job of the artist. This may sound daunting, but it's really not. In order for the model to work in *Quake IV*, we need to create several maps, some of which are hand drawn, others generated from our model, using *Open Render Bump* or *ORB*. You'll find full versions of *Blender*, *ORB* and the source files you'll need on the coverdisc. UV-Normal and texture mapping can be a serious pain in the behind, and if you get into difficulties with this tutorial, check *ORB*'s documentation, or the online forums at **www.elysiun.com**, or **www.doom3world.org** for solutions. Its also a good idea to browse the PK4 files that come with *Quake IV* for an idea on how the pros did it. **PCF**

Face facts

How to add convincing mapping to your character
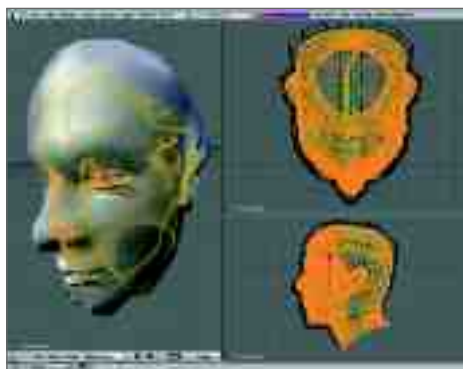
1 Load your model, arrange your layers so you have the two head models on the same layer. Press **Center New** then **[ALT]+[G]** and **[ALT]+[R]** to reset their positions. Select all the faces, and press **[CTRL]+[N]** to fix the normals, and on the low-mesh, press Smooth several times.
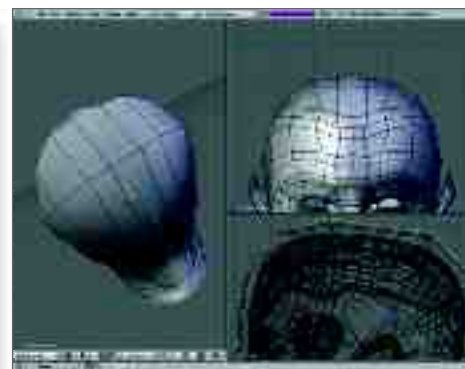
2 The high poly head should be contained within the low poly one, if it isn't, resize the mesh so it fits inside. Next, deselect the faces, go into **Edge Select**, and select a line of faces from the back of the neck to the forehead as shown, press **CTRL+E** and select **Mark Seam**.

"In order to make the model work in Quake IV, we need to create several maps. using ORB"

6 From the **UV menu**, select **Save UV Face Layout**. Load this into an image editor, and paint over the layout in greyscale to create a bump map. For example, we've painted noise around the chin area for stubble. Save this file as a .tga in your **ORB/Imports** folder.

Mapping the details
This is in fact our low resolution mesh, although it looks far more detailed than it will appear in-game.

'Normals' Data
It's pretty simple to automatically create this useful surface data using *ORB*.

Flaying yourself is fun
Unwrap your model's UV co-ordinates and stretch yourself over it Hannibal Lecter-style..

ON THE DISC

Blender 3D
Quite possibly the best 3D program in the world – ever. There's not much you can't do with this program, and its totally free to boot. Install the copy that's lurking on our coverdisc right now.
www.blender3d.org

Open Render Bump
Also known as *ORB* for short. This little-known program is a godsend for rendering your bump and normal map data into *Quake IV*-friendly, crunchable format. Once again, the application's open source, so you don't need to hand over a pile of cash to use it.
tinyurl.com/lkww9

GIMP
To further hammer home the fact that the only investment needed for this project is a copy of *Quake IV* itself, this is a plucky alternative to *Photoshop* for creating your diffuse and bump textures. Adobe's renowned photo editor will make things a great deal easier, but *GIMP* is more than capable.
**www.gimp.org**

NEXT MONTH
FINISHING TOUCHES
WE SHOW YOU HOW TO COMPLETE YOUR CHARACTER MODEL AND CONCENTRATE ON FINE DETAILS
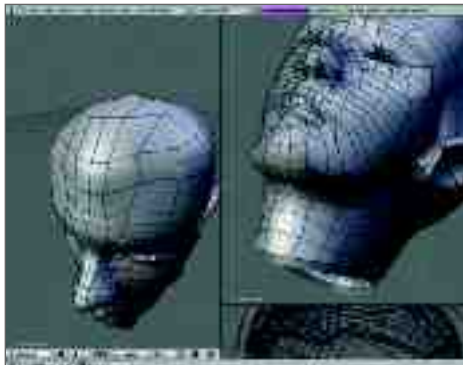
3 Select another row of faces perpendicular to the last lot, across the brow, and again, mark them as a seam. Mark another seam under the chin as in the picture, then TAB out of edit mode, press **[F]** to enter **UV-Select** mode, and make sure all faces are selected.
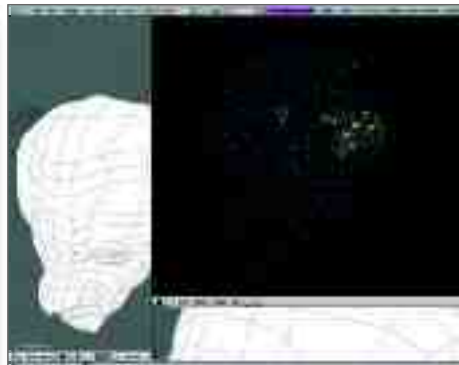

4 Split the viewport, change the new window to **UV/Image editor** mode then press **[E]** to do an 'LSCM Unwrap'. Press **[A]** in the image window to select all UV-vertices, then rotate until the layout is the right way up. Don't worry if the layout looks bizzarre: we'll fix it in the next step.

5 Press **[O]** then select a vertice and drag it around to stretch the layout. With a vertice selected, press **[P]** to pin it in place as shown (they should turn red). Press **[E]**, and the program will unwrap the model more accurately. Keep trying until you get a pleasing face layout.
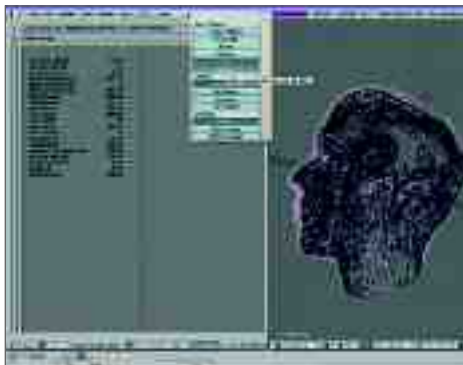
7 Back in *Blender*, select all faces and press **[CTRL]+[T]**. Export both meshes as Wavefront OBJ files, and save them into your ORB/Imports folder. In there, you'll find **PCFQ4head.cfg**. Open this in *Notepad*, and change the names to match the files you've just created.

8 Fire up ORB, and type **exec pcf_q4_head. cfg**, press **[~]** to go to 3D view, and press **[+]** until the flashing white mesh contains your hi-def model. Press **[~]**, then type 'renderbumphw exports/head. Leave your PC alone during this process, lest *ORB* may crash.

9 When the normal map has finished, type **addnormals exports/head.tga imports/ bump.tga 3**', bump.tga being your grayscale map. Now simply repeat this process with the body, and paint your textures using the UV face layout we saved earlier.

Luis Villazon
RADIATES KNOWLEDGE

AskLuis...

ALL YOUR PC QUESTIONS ANSWERED

Free technical support

Got a problem with your PC? Write to Luis, or better still drop him an email. Assuming you can get your PC to work, that is…
**pcfhelpline@futurenet.co.uk
PCF Helpline
30 Monmouth Street
Bath, BA1 2BW**

Don't panic

Luis Villazon tosses another bunch of supplicants on the barbie and serves up their charged carcasses for your education, erudition and, possibly, entertainment
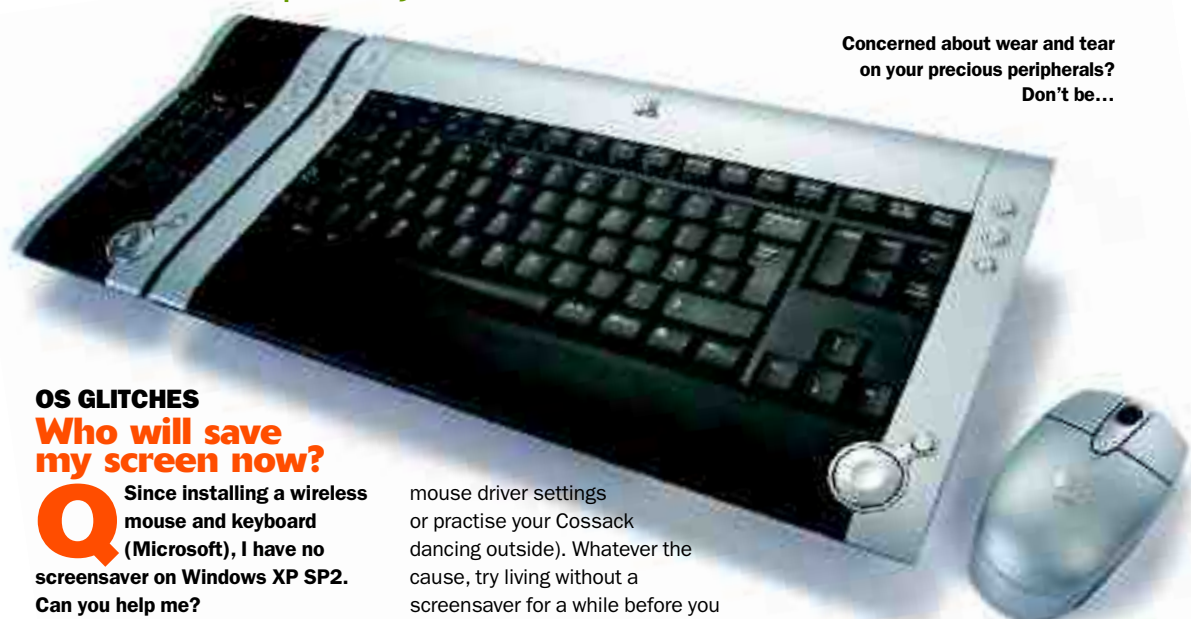
Concerned about wear and tear on your precious peripherals? Don't be…

OS GLITCHES
Who will save my screen now?

Q Since installing a wireless mouse and keyboard (Microsoft), I have no screensaver on Windows XP SP2. Can you help me?

JAYNE
jayne.chenery@ntlworld.com>

A Gnngh… must… resist… waves of apathy… sweeping… over me. Can't… bring myself… to… care. Screensavers are useless and I hate them. Who cares what delightful Alpine snowfall display you have on your screen? It only appears when you're not there. Want to lock your keyboard? Log out. Want to save your screen? Turn it off.

Your screensaver might be disabled because of some sort of driver conflict (expect a hotfix, since Microsoft is pretty good at patching its own products) or it might simply be that your optical mouse is so sensitive that it is registering movement even when you are not using the mouse – perhaps due to vibration on your desk (try switching to a lower dps resolution in the

mouse driver settings or practise your Cossack dancing outside). Whatever the cause, try living without a screensaver for a while before you try to fix this "problem". You may find it strangely liberating.

APPLICATION GLITCHES
Missing mail

Q A couple of days ago, all my emails from the *Outlook* Inbox and Sent Items folders simply vanished. How can I get them back?

TUMI
tumelo@mongkhumo.co.za

A Disappearing emails, vanishing car keys, evaporating polar ice caps. To the end user, each of these things appears as a single symptom but they are all complex phenomena that can be caused by what we in the trade refer to as "a whole bunch of stuff". So *McAfee VirusScan* for example has a known "interaction" with *Outlook Express* that can scrub your inbox. Server-side problems

with IMAP or *Microsoft Exchange* mail can prevent you from accessing your mail on the server and corrupted *Outlook Express* identities can do the same thing at the client side. The list, frankly, is as long as you can be bothered to make it.

Fortunately, the extremely high concentration of troubleshooting midichlorians in my bloodstream allows me to simply guess with complete confidence that in your case the missing messages are caused by corrupted .dbx files. *Outlook Express* stores all the messages in each e-mail folder in a single .dbx file. Single-byte corruption in these database files is quite common and will cause *OE* to ignore the entire folder when displaying emails. There are commercial .dbx recovery tools on the intertron, but you can resolve most corruptions by simply clicking

File→Folder→Compact or Compact all folders. So useful is this piece of database maintenance that at one time, *OE* did it automatically in the background. And then they found that the compacting utility could itself cause .dbx corruption if the system was under load so it was changed back to manual in XP Service Pack 2.

BATTERIES
Limitless power

Q Can I run my PC off a car battery? A UPS or generator is not feasible for my situation. I know Intel has developed computers like this for parts of India. If you can, will you point me in the right direction? Is it safe and how long do you think the battery would last, assuming the computer is on 8-15 hours a day?

I have no idea what the power consumption of my PC is overall but I have a 550W power supply and a 24-inch LCD monitor.

WILLY THE WOOKIE
yo-daworks@mweb.co.za

A The business of converting a PC to run off a 12-volt car battery is pretty well understood by the "carputer" community. You can check out www.dashpc.com and carputer.org if you want to immerse yourself in this lunatic mindset. However, all of these systems aren't really powered by car batteries at all. They are designed to be used when the car engine is running so they are actually driven by the energy from burning petrol that is converted several times into different flavours of electricity via the alternator, battery, inverter and transformer. It's a heroically inefficient method of

running a computer, certainly but at least it works.

Running the PC off a battery that isn't continuously topped up by an external power source, on the other hand, is virtually a non-starter. Lead-acid cells have a significantly lower energy density than conventional lithium batteries, which is bad enough as it stands, but the real kicker is that their voltage discharge curve isn't a curve at all – it's a straight line. This means that the voltage of the cell drops continuously as the battery discharges. A PC motherboard needs a 12-volt feed which is what the battery supplies when it's fully charged. But before the battery is even a quarter discharged, that voltage will have dropped below 10 volts and the motherboard will cut out. You would need four or five batteries hooked up in parallel to give you the usable life of a normal single cell. Even then, it is extremely doubtful whether you would be able to run a 550W PC plus a monitor for more than an hour in this configuration. Fifteen hours of continuous usage is pure fantasy.

If you want that kind of endurance off the mains electrical grid, you will need a 600W photovoltaic solar array (about £4,000 – www.newenergy.org) or your own nuclear pile (reactor.reed.edu). The choice is yours…

CPU
My CPU is too hot

Q Recently, my computer has been hanging up (actually makes four long beeps then shuts down). My Dad, who assembles PCs, doesn't know what is wrong with it. We both think it's the processor, as when we touch it, it is steaming hot. He

looked at the CPU temperature and it was at 99 degrees.

ANTHONY
john.m.warrington@btinternet.com

A The processor looks hot, feels hot and behaves as if it is hot. What do you want from me? This reminds me of the man who says to his priest: "Father I think my wife may be having an affair with another man."

"Has she been acting strangely lately?" asks the priest.

"No, not that I have noticed."

"Have there been anonymous phone calls or unexplained items on your VISA statement?"

"Nothing like that."

"Well, what makes you so suspicious then?"

"It's just that I can't think of any other reason why you would be in bed with us."

OK, it doesn't really remind me of that at all. But you, your dad and that man are all idiots for ignoring what is staring you in the face. Fit a new/bigger/better heatsink/fan and stop pestering me with such trifles.

HARD DISKS
Missing NTLDR

Q I'm trying to get an old PC up and running. It had Windows 2000 on it. Now when I boot it up it gives me the error "NTLDR is missing". I formatted the hard drive using my other PC and installed XP Home on the old hard drive. It still gives me the same message. After installing XP on the old hard drive I now have the option to use it when I boot up my normal PC. How can I remove it as an option? I also have an old version of XP home on my computer; can I remove that too?

Thanks for the brilliant magazine. Keep it up with your patented sarcasm.

JOHN NEL
nelhj@global.co.za

A My sarcasm isn't actually patented, I merely own the copyright. Still, if Amazon can patent the concept of clicking a button to buy something, maybe I should have a go. This would let me licence my sarcasm technology to all the other freelancers that have some technical knowledge but not nearly enough inner rage to succeed in the cutthroat world of answering idiotic questions all day long. Sigh. Where was I?

The NTLDR error occurs when the partition marked as active

Bedside table
This month, Luis is reading…

Interesting Computer Projects
Web www.ugr.es/~ama/compro

Although the title of this website suggests an impossibly broad scope, this is actually mostly concerned with the business of building various portable distributions of PC operating systems. If you want a Linux distro on a single floppy disk or on an SD memory card, this is the place to start. The site itself is really nothing more than a list of links to other single-project sites but it is well maintained and sometimes it is helpful to see the big picture, if for no other reason than to tell you whether someone has already completed the preposterous project you are considering.

FAQ
Quasar cryptography

Harness the cosmos to guard your precious secrets.

What is a quasar?
A distant, bright source of radio waves. Quasars output as much electromagnetic energy as several hundred galaxies combined. They are believed to be caused by matter falling into a supermassive black hole at the heart of a large galaxy.

How do we use them in cryptography?
The output from a quasar measures in an unpredictable way, so you can use it as a random number generator. Provided that the sender and recipient both observe the same quasar at the same time they can treat the numbers as a "one-time pad" and create codes that cannot be broken.

Why not use a simpler number generator?
With a quasar pad, all you need to do is tell the recipient which quasar to look at and when to start monitoring.

What happens if you don't have your own radio telescope?
You don't need one. All that's required is for an observatory somewhere in the world to stream live quasar data onto the web and then anyone can use it to encrypt messages.

Couldn't you stream a more conventional number source then?
Possibly, but this would run the risk of someone intercepting it. A quasar could be checked by several observatories.

Read more at:
tinyurl.com/rlfky

doesn't contain the operating system boot files. This can happen if the partition information is incorrect or corrupt or if the boot files on it are missing or damaged. A classic example is where you install Win9x on a smallish disk that is still accessed via the int 13h BIOS interface and then migrate this to a larger disk using some kind of disk mirroring software such as *Norton Ghost*. The new disk has a different head geometry so the partition information is wrong but Win9x doesn't actually check this. So the upgrade continues to work until you move to XP (which does check the head geometry info) and you get the NTLDR error.

This doesn't happen when moving from Win2k to XP, so I think it's much more likely that the NTLDR file itself has been damaged. To see how to do this – in glorious living colour – check out the step-by-step guide on page 120.

CPU ISSUES
Hurry up...

Q Briefly, I have a Dell Dimension 4600 3Ghz, which is currently running Windows XP Home Edition. Recently the hard drive went wrong, and I replaced it. When I came to install it I had a problem with the BIOS recognising either the new drive or the DVD drive. On the advice of Dell I reset the machine to factory default, not realising that it would turn hyper-threading off (yes, it was enabled before). So I merrily went about my way installing Windows and every other Tom, Dick and Harry before it occurred to me to check the BIOS settings. When I did, I found hyperthreading disabled so I turned it on, and that is where my tale of woe starts *[This is "brief", is it? – Luis]* because now I get the Blue Screen of Death shortly after start up, and when everything has loaded. If I turn hyper-threading off the machine is fine.

It has been suggested to me that a full reinstall is the answer. O Wise One, do you have any ideas? Polite ones, that is...

DANELECTRO
jeffreyjadams@tiscali.co.uk

A In certain very tightly constrained situations, a hyperthreaded system can run about 20% faster than a similar system without it. You and I, using our PCs to do a little bit of everything, will be very lucky to see a 10% improvement, which is at the threshold of what you can even detect with the naked eye. In return for that, you'll have to put up with regular crashes and lockups from a thinly spread smattering of unrelated software. Just the time

Restoring NTLDR
It may be unpronounceable, but this file is vital

1 **Where has it gone?** NTLDR is one of the critical system files used by Windows XP to boot the operating system kernel. If it is missing or damaged, you will not be able to boot from the hard disk. This can happen as a result of numerous unexpected shutdowns or hard disk faults as well as certain rare upgrade scenarios.

2 **Boot from CD** To fix this vital file, you will need an original Windows XP setup CD. Boot your computer from the CD in the normal manner. After a few moments, the 'Welcome to Setup' screen will appear. You should press **[F10]**, or alternatively press **[R]** to repair the problem, then press **[C]** to start up the Recovery Console.
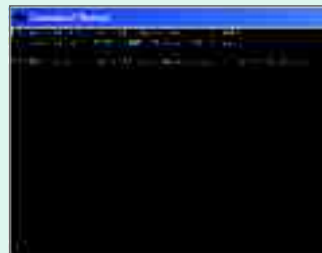
3 **Find a new copy** Copy the NTLDR file from CD to the root of your main system partition (in most cases, this is **C:**). If the partition was not formatted by using Windows, you might also need to run the Recovery Console's **fixboot** command to make the active partition automatically bootable.

4 **Restore your partition** Now reboot without the CD in the drive and Windows should start from the hard disk. Use the **Disk Management** snap-in to reset the original system partition as the active partition at this point. Type **compmgmt.msc** in the **Start→Run** box and click **Disk Management**.

almost get through the 'set up player profile' bit, with *Lock-On: Modern Air Combat* I can usually play for about half an hour before everything goes black and I get the POST screens. This is limited to games; *OpenOffice*, *Opera* and *Studio 8* are all fine. Checking the Application Log in the Events Viewer shows two errors just prior to each restart, but there's no information in them that I know how to use to find the cause of my problems. They both say "The description for Event ID (0) in Source ( ) cannot be found."

I installed a new (decent quality) 650W PSU about six months ago, have reformatted and reinstalled Windows a couple of times. I'm guessing (with a reluctant cringe) that I've got a hardware problem. But where?

PAUL WHITEHOUSE
p.whitehouse@tiscali.nl

A It's your graphics card, without the merest scintilla of doubt. System locks that appear within a short while of

"Radiation is one of those words that provokes an irrational, negative reaction in people"

you spend rebooting will completely eat up any performance gains.

In the short term, the work-around is to turn off hyperthreading. Let's face it, if you didn't notice it was gone until you check the BIOS setting, you probably won't miss it. Medium term, you can try an track down exactly which program or driver is causing the crash and either disable it or hope it gets patched. Long term of course, proper multi-core CPUs will make the legerdemain of hyperthreading entirely redundant.

GRAPHICS CARDS
Suits you, sir

Q I have a home-built system that's been running just dandy for about 18 months and just recently it's been going a bit flaky. My copy of Windows XP SP2 is legal and fully up-to-date (according to Microsoft's Update Centre), I have the latest/last patches for my games and I am using the latest ATI drivers for my video card. The problem is that when I try to play games my PC just reboots. For example, with *Morrowind*, I can

playing games but which do not occur in 2D applications are always caused by graphics card faults. Here's your next diagnostic: as soon as it crashes, reboot and immediately try the same game again. If you get another half hour of play out of it, it's the driver – download another or hang out in the tech support forums and Kvetch if there isn't one yet. If the game crashes again almost immediately however, you have an overheating problem. Install more fans, water cooling, or a heatsink the size of a Belgian waffle.

CABLES
Just plug it in

Q I have set up my old PC for the kids, everything is plugged in right (I think) but when I switch on all I get is "check video cable connection" on the monitor. Can you tell me what I have missed out?

TRACEY
tracey.wade@ntlworld.com

A You might have plugged the video cable into the wrong VGA port. You will normally

see a VGA port on the row of other miscellaneous ports, like Ethernet, USB and what have you. This is the built-in video controller on the motherboard. There might also be a second port on an expansion card at right angles to this. This is a separate graphics card and will override the built-in video so you should plug into that one. On the other hand, if you have done that and still get no signal, maybe the graphics card is dead. Try taking it out and plugging the VGA cable into the motherboard port. It may also be worth swapping the cable itself for one that you know works. Sometimes you can get a broken wire that will prevent the monitor receiving a recognisable signal.

OS GLITCHES
Missing Explorer

Q I got home the other day and noticed that my PC wasn't responding to keyboard input. I thought that the connector had worked itself loose so I unplugged it, plugged it back in, and hit the reset switch. This got the keyboard working again, but now for some weird reason, my desktop icons and taskbar no longer load. It was working perfectly when I left it that morning. I noticed in the Task Manager's process list that explorer.exe was absent, and my attempts to start it via the Task Manager were greeted by the following error message: "This application has failed to start because the application configuration is incorrect. Reinstalling the application may fix the problem". The problem still exists when I restart in safe mode, and System Restore couldn't fix it. Besides reformatting and reinstalling Windows (which I want

to avoid if possible). Is there anything that can be done?
KIERON THWAITES
ron2k.za@gmail.com

A Only the "reformatting" part of "reformatting and reinstalling" will lose you your valuable data. Skipping this step and moving straight to the "reinstalling Windows" stage will protect your data and have no effect on the efficacy of the cure.

HARD DISKS
SATA versus IDE

Q I have two hard drives in my machine; a 74GB SATA Raptor and a 120GB IDE. The Raptor is my system disk; the other one I use for storage, and it has started to give me grief. Sometimes, when an app accesses the drive, it'll freeze the system. I have the system disk configured as the first ATA master and the other as IDE slave, even though it's on the end of the IDE cable. The jumper is also set to slave – is this a mistake?
TIM BAIRD
timb@iol.ie

A SATA and IDE use completely independent channels, so you have to set each set of drives up as if the other were not there. Having a single IDE drive installed as a slave is not a valid configuration, so it's hardly surprising the system is locking up. Set up both hard drives as master of their domains and all will be well.

CANCER RISKS
Deadly radiation

Q This Wi-Fi business is worrying my wife. We've got a DG834G and a couple of 54G USB thingies. I want

to get 108 or faster. The trouble is, my wife is concerned that we're exposing ourselves to nasty microwaves that are even worse than the ones commonly associated with mobile phones, and frying our bits. Should I tell her to stop being melodramatic?
TIM PROFFITT-WHITE
talltimpw@yahoo.co.uk

A No. You should just pointedly ignore her. Radiation is one of those hot words that provokes an entirely irrational, negative reaction in people who weren't paying attention in science class when they were 11. Which is virtually everyone. Nothing you or I can say will change this; anything with 'radiation' in it is always bad. Unless it also has the word "natural" in it. So ultraviolet is considered perfectly safe, even though it causes millions of malignant melanomas a year.

Wi-Fi uses the 2.4GHz part of the spectrum and, yes, this is the frequency known as microwaves. But microwaves are non-ionising radiation. They don't have enough energy to strip away electrons and introduce harmful free-radicals into your body, nor can they cause mutations in your DNA. At high intensity, they will heat certain substances, which is how microwave ovens nuke pizza. But an electric lightbulb gives out the same wavelength of infrared radiation that is used by your oven to roast a turkey. Does your wife also worry about exposing herself to that?

Don't try and argue with your wife, or show her this letter. Just plug a Haze air freshener in next to the access point and tell her that from now on you will be networking the house via the safe, natural medium of aromatherapy. **PCF**

Answers 1a 2b 3a 4b 5a

Words Luis Villazon **Pictures** Mark Mitchell

state of the art #13

THE LATEST TECHNOLOGY EXPLAINED

Microsoft Origami

Microsoft's new Ultra-Mobile PC concept sounds great on paper. James Morris reads between the lines

What the ancient Japanese paper-folding art has to do with small, media-oriented computers is a bit of a mystery to us. This is presumably why Microsoft is using Origami as the codename for its latest attempt to drive PC technology into more consumer-friendly spaces – the enigmatic name supposedly adds to the mystique.

Unlike many products that are borne to the market on a cloud of hype, however, the mystery surrounding Origami lasted a matter of weeks. The initial teaser website, at www.origamiproject.com, left visitors with very little idea what Origami was supposed to be. Some even surmised it would be a portable Xbox to rival Sony's PSP. Pretty soon the project's cover was blown, though, and Origami was revealed as a new type of handheld computer, known as the Ultra-Mobile PC (UMPC).

PAPER CONCEPT

Origami has its origins in a project called Haiku. This was unveiled at WinHEC in 2005, although development started as far back as 2002, and the ideas behind it originated a decade ago. It's called Origami because, just as the latter is the art of folding paper in intricate ways, Microsoft similarly believes the UMPC folds technology together to create a unique, compact and powerful portable device *[You're making this up – Ed]*.

The core of the Origami system is a version of Windows XP Tablet PC Edition 2005. The UMPC is intended primarily to be operated by touchscreen, although the original Microsoft prototype did sport a mini keyboard. The screen is specified at 7in or smaller, with at least 800x480 resolution. The device itself supposedly weighs less than a kilo, and has integrated Wi-Fi and Bluetooth connectivity.

One of the key features of Origami is the Touch Pack, which includes five main components. The Program Launcher is a finger-friendly front end which sits on top of the Tablet PC OS to provide easier access to programs and

Turning Japanese
Origami unravelled

Asus's R2H is one of the first fully working UMPCs, although it won't be available in the UK until later in 2006.

The Program Launcher offers much easier access to the programs and utilities installed on the UMPC.

The Brilliant Black *Windows Media Player* skin is designed to be easier to operate from a seven-inch touchscreen.

"A complete PC the size of a hardback book is an astounding achievement"

PORTABLE POWER
DualCor already makes a device which looks uncannily like a UMPC, and it works as a smartphone too, running Windows Mobile 5.

Where would any Microsoft OS be without a built-in game? For the UMPC, MS has chosen the trendiest game around – Sudoku.

The *DialKeys* app places a redesigned QWERTY keyboard onscreen, divided between the two bottom corners for easy thumb operation.

functions than the Start menu affords – a bit like Windows Media Center does for the sofa-based remote control user. Touch Improvements is a utility which alters system settings to make Windows more UMPC friendly. This app lets you define the width of scrollbars and alter the size of thumbnail folder views, to make the machine easier to use.

The Touch Pack also includes a new fullscreen skin for Windows Media Player called Brilliant Black, which incorporates larger buttons for easier playback control. DialKeys is a special onscreen keyboard designed by Fortune Fountain. It places touch-sensitive keys in a convenient place in the bottom corners of the screen for quick and easy access, but still uses the basic QWERTY organisation to aid familiarity. The final part of the Touch Pack is a Sudoku game, just in case you were worried Microsoft hadn't jumped on any bandwagons lately.

The rest of Origami is extremely open-ended though, just like any other PC. Microsoft can no longer claim to be solely concerned with software, considering how successful the Xbox and Xbox 360 have been. The company's plan with UMPCs seems to be similar to the strategy that it employed when it launched Windows XP MCE and the PMC: dominating a market by supplying a core spec, but allowing third parties to design their own devices with additional capabilities.

The first few UMPCs already offer novel features. Asus' R2H includes a built-in webcam, a GPS transceiver and fingerprint reader, though it's not clear how much of this will come as standard. Samsung's Q1, however, doesn't go far beyond the basic specification. Judging by these initial devices, one promise hasn't been kept in the transition to a real product, though – battery life. The UMPCs we've seen are likely to last in the region of three hours or less before needing a charge – far from the all-day operation which Bill Gates mooted for the Haiku prototype. So, while they may last long enough for you to watch a full-length movie, they're not quite on par with other mobile technology, such as laptops.

MORE THAN JUST A TINY TABLET PC?

On the surface, Origami doesn't seem as earth-shattering as the hype would have us believe. After all, from one perspective the UMPC could be seen as just a souped-up PDA. Similar-looking devices, such as ViewSonic's ViewPad 100, have been available for a few years. But these predecessors suffered from their use of relatively puny PDA processors and bland Windows CE operating systems. Most people preferred the versatility of running full Windows applications, which Origami can now offer in the same form factor.

While there is no single revolutionary development in the UMPC, its originality comes from the way in which new technologies have been amalgamated. Ultra-low voltage mobile processors have become more powerful, LCD screens cheaper, and tiny hard disks now boast impressive capacities, and all of these developments have made the Origami project a reality. The easily sourced components, however, means that other manufacturers have already produced Origami-like devices. DualCor's cPC, for example, is a similarly sized device with a five-inch screen and a built-in mobile phone. It runs both Windows XP Tablet Edition and Windows Mobile 5, making it a SmartPhone as well as a fully fledged PC.

The biggest question for Origami is whether the UMPC is small enough. A complete PC the size of a hard-backed book is without doubt an astounding technological achievement. But it might be worth waiting for a few more copies to hit the shelves before you decide which UMPC to invest your cash in. **PCF**
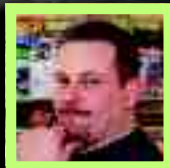
NEXT MONTH
SOCKET AM2
WILL THE ATHLON 64 UPDATE HAVE WHAT IT TAKES TO IMPROVE ON INTEL'S CONROE CHIP?
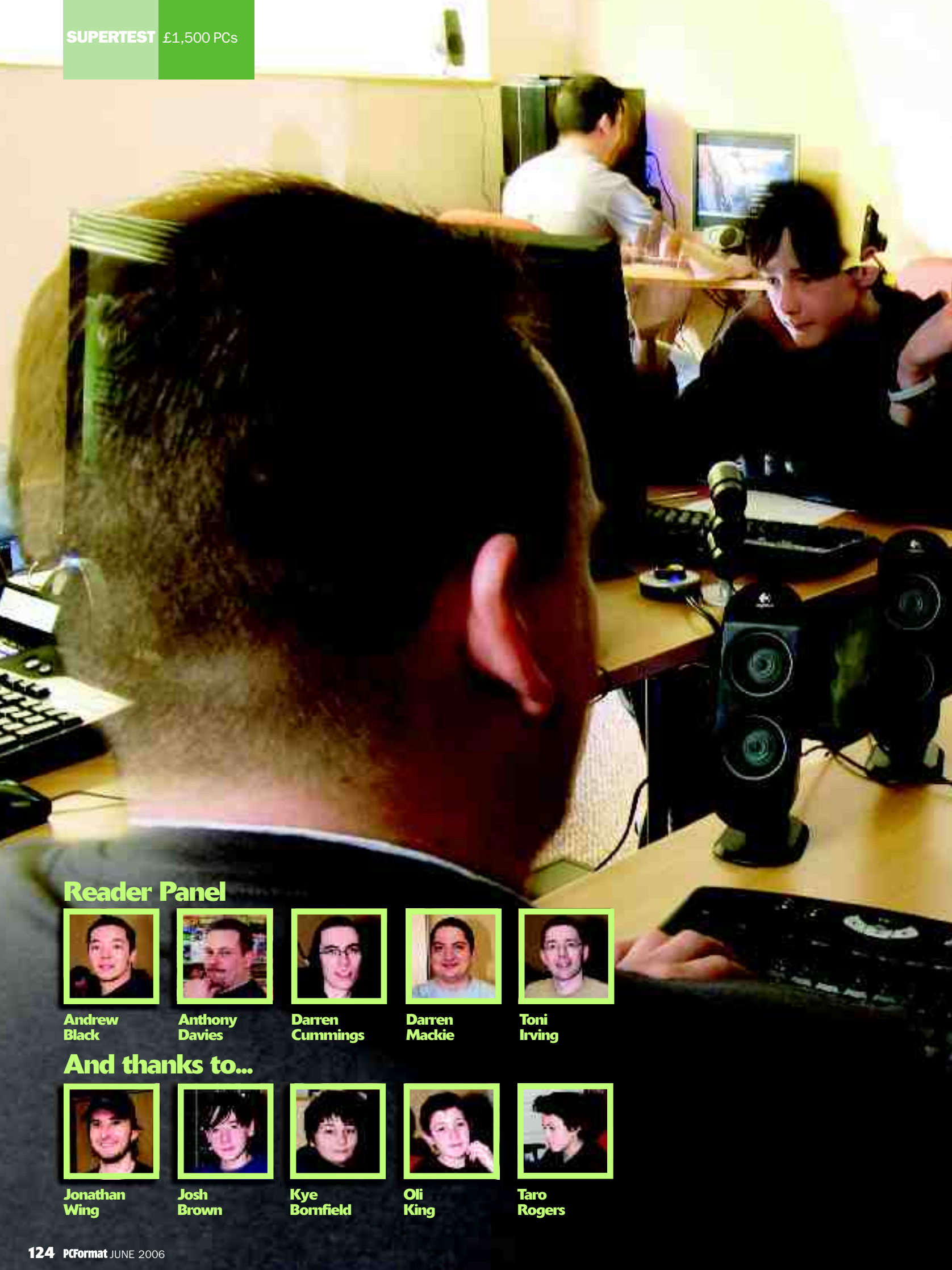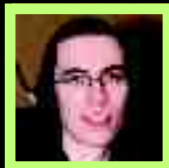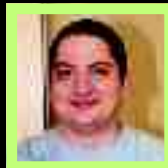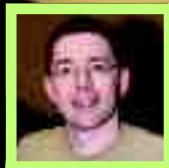
Reader Panel

Andrew Black

Anthony Davies

Darren Cummings

Darren Mackie

Toni Irving

And thanks to...

Jonathan Wing

Josh Brown
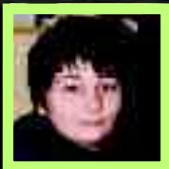
Kye Bornfield

Oli King
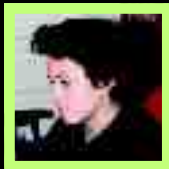
Taro Rogers

Big rig Shootout!

We approached 10 PC manufacturers with a simple brief: build us an über games PC for no more than £1,500. Then we got ten of you got to blast each other to smithereens using them. Get in!

Ten PCs. Ten PCFormat readers. One objective: to find out what you lot, the gamers, modders and PC buffs who form our readership, think of the best efforts of the foremost UK system builders. Alright, so there was another objective – shoot the crap out of each other in *Quake IV* and *Call of Duty 2* all day, with pizza, pop and coffee on tap to keep our strength up. So that's what we did, and a smashing time was had by all.

As we all discovered when we rotated between the different machines, £1,500 can get you an awful lot of hardware. The brief we supplied our 10 system-builders included all the necessary peripherals too –

so that's a keyboard, mouse, monitor and speakers. The result was a very broad selection of machines; some housed in sexy pre-modded cases, some with gorgeous monitors, others with neither, but a bigger emphasis on higher internal spec. It was gratifying to see many of the manufacturers understanding their market by providing Logitech G15 keyboards and mice – some of the best input devices available.

PREPARE TO FIGHT

Indeed, one of the most interesting aspects of the test was that we found out who was good at building games PCs, and that's something you can judge by

▶ seeing not only what components are included, but how focussed the machine is on the task at hand. For instance, gamers don't really want a machine full of apps that degrade performance. Likewise, a couple of the PCs on test didn't perform quite as well as their spec-sheets would imply, and there, we have an indication that the most modern drivers hadn't been installed, or the manufacturer had opted for, say, a low-spec mobo to shave a few pounds off the price. Surprisingly, the variation in performance was large, with certain PC lagging behind in the polls due to jittery performance. Some manufacturers are clearly more experienced at putting together gaming rigs than others.

THE EYES HAVE IT

But however appealing any system might be in the performance stakes, we found a lot of our panel gravitating toward systems that implied performance through their futuristic or techy looks. The Cyberpower system, for example, housed in that glorious blue-glowing NZXT Lexa chassis, drew admiring stares and a queue of players throughout the day, as it really did look the part. The MESH system, on the other hand, didn't look like a runner worth backing – that standard-issue black chassis slid into relative obscurity, despite the fact that inside it lurked one of the most powerful and highly-specified systems in our test, packing as it did an X1900XTX. And let's

"All of the PCs were good gaming machines, and all were well-equipped"

not forget, there's no accounting for taste. For instance, the 'industrial chic' of the Scan 3XS Isotope PC appealed to the younger readers in the group, while the older ones couldn't really see it occupying a place in their homes.

In short, each of these PCs brought something different to the party, and each had a very different list of specifications. We had CrossFire systems, SLI systems, cards ranging from the high-end, pixel-pummelling X1900XTX, down to the whippet-lean 7600GT. We had single-core CPUs, dual-core CPUs, and even a surprise entry which housed an AMD Opteron core. It's a component you wouldn't generally consider for inclusion in a games PC, granted, but people were impressed with its performance. Identikit PCs these most certainly were not.

And as you might imagine when you have 10 PCs networked together, the day had its fair share of problems! At about 3pm, the network decided to fall over, thanks to a loose RJ45 cable that had slipped out of the ethernet switch. And one of our test PCs didn't work at all to begin with, as the Windows activation period had timed out, which led to a fruitless and frustrating hour and a half on the blower with Microsoft technical support. Thankfully, the manufacturer was able to supply us with the key for the installation, so by 10am, we were up and running and ready to roll. Frankly, with so many variables involved, it's amazing more didn't go wrong...

But the real stars of the day were the players. We had some serious *Call Of Duty 2* fanatics in the house, which just goes to show how popular the game is. Some were team players, shouting encouragement and skilfully guiding their comrades in CTF missions, while others played the lone wolf, sniping at enemy soldiers from far-off windows and loving every minute. To our panel of readers who attended the event, *PCF* salutes you! Our thanks also go out to Plantronics, which very kindly supplied each reader with a gaming headset to take away with them. **PCF**

HOW WE TESTED

Vigorous gaming may be the most telling test, but careful observation and raw performance figures are important, too...

Open fire!

The best way to tell if a PC is a worthy of your attentions is by sitting down and having a play with it. We installed *Call of Duty 2* and *Quake IV* on each machine, and rotated all our players between them so everyone got to have a go on each machine. A Dell XPS Gen2 was used as the game server, so as not to impact the performance of any one machine.

Critical appraisal

The majority of the test involved seeing what our panel of readers thought. To this end, we supplied questionnaires for each machine, asking players to give us their thoughts on its looks, performance, accessory bundle (keyboard, mouse, monitor and speakers), and their overall impressions. We also asked them to give scores for each of these criteria.

Benchmarks

To garner like-for-like performance figures, we ran a series of benchmarks after the event. These were *Quake IV* timed demos, *3DMark06* in HDR mode, and *PCMark*, which gave us a battery of performance figures, including memory latency, file encryption, video encoding and general hard drive speed scores.

Touchy feely

While raw numbers are important, so is how each machine feels, and this is something that's a bit harder to measure. Chatting with our panel throughout the day threw up some interesting thoughts on the PCs here, and highlighted the fact that it's not all about speed and performance. A PC needs to give off good vibes, too!

Serves you right
Think you could do better than this lot?

Don't worry if you missed out on the chance to play PCFormat in our very own office. Now you can beat us to a bloody pulp online! The official PCF Game Server has been kindly donated by FastHosts Internet (www.fasthosts.co.uk) from its wide range of dedicated server packages. These are ideal for setting up your own multiplayer game session in situations where the server and the bandwidth isn't shared with other gamers.

From just £49 per month, you can get super-low latency and immense flexibility, with dedicated game servers from FastHosts. Battlefield 2, Counter-Strike Source, Teamspeak hosting, whatever you want, a game server dedicated to your gaming clan is a truly awesome resource.

SERVER DETAILS
PCF Game Server
Currently running
Battlefield 2
IP: 88.208.200.109
Password: Cueball

HEADSET HEAVEN

Also, a big thanks to Plantronics for helping the day's gaming by providing each of our panel with a gaming headset to take home with them. You can check out Plantronics' excellent range of gaming headset communicators at www.plantronics.com.

Yes! You too can taunt people while you kill them!

MESH

4400+ X2/X1900XTX

Price £1,500 **Manufacturer** Mesh Computers **Web** www.meshcomputers.com

WE SAY...

MESH Computers has a reputation for building solid machines, although its choice of chassis leaves a bit to be desired – see our reader's comments over yonder and you'll get the picture. However, given the excellent spec of this machine, it ticks all the boxes for heavyweight performance rig. With the excellent Athlon 64 4400+ X2 CPU and an X1900XT, complemented by 2,048MB of DDR400, it ought to do the business, and does – a very respectable *3DMark* score of 5,325 puts it in the upper echelons in our book.

RADEON ACTIVE

The fact that it achieved a fairly standard-feeling *Quake IV* score of 80FPS is attributable to the Radeon card – that old OpenGL chestnut again, as Radeon cards are generally less happy dealing with it than NVIDIA cards. Still and all, it's a lovely system throughout – solid, well-performing, if just a little underwhelming in the eye-candy department.

YOU SAY...

Unsurprisingly, the player verdict was almost unanimous: while the rig looked a bit dull, it was clear that MESH spent its budget on performance parts. "It's boring, and looks like a Dell" was pretty much the most incisive comment in the looks department, so we'll leave it at that.

SPEEDY GONZALES

However, performance-wise, nobody took issue with the MESH: "Good performance, good card, good CPU", "very smooth graphics and virtually silent", and simply "good". As one player commented: "MESH has dropped looks in favour of performance". Bang on, boys.

The accessories were universally liked too: "Good combo, with the Logitech G15 and G7 mouse. The speakers are alright too", and "the wireless mouse performed very well". Strangely, the 19" Viewsonic monitor wasn't mentioned in dispatches at all; in this case, we'll assume that people had no reason to diss it. No news is good news...

83% **PCF says...** "A cracking rig. Shame about the boring looks though."

You say... "Takes it all in its stride"
★★★★☆

Aria

3700+ / 2 X 7800GT

Price £1,500 **Manufacturer** Aria **Web** www.aria.co.uk

WE SAY...

We're no fans of that Silverstone chassis. It's just too damned big, and while that may give some a tremendous sense of value, we prefer something a little more stylish and slink-some. We've no quibbles with the innards though – Aria saw fit to deck out its rig with a pair of NVIDIA 7800GTs; nobody can argue with £400 worth of 3D card. And a healthy *3DMark06* score of 5,139 means it handles HDR tasks just fine.

YOU'VE BEEN FRAMED

We were a bit less impressed with the *Quake IV* score though – to be honest, a pair of NVIDIA cards should probably be clocking more than 75.5FPS at 1,280x1,024. Clearly the 3700 chip is the weak link in this case.

The rest of the package is more than tasty enough, with a top single-core Athlon and excellent accessories, including the ace Logitech G15 keyboard – a distinctly popular inclusion in this test. And hey, a 19" monitor is always welcome, of course...

72% **PCF says...** "Too big by far, and the graphics are held back by the CPU."

YOU SAY...

The hooning great chassis that housed the Aria rig, the biggest one on test, won few admirers. It stood as high as any other standard ATX chassis, but the colossal depth meant that it hung a few inches off the front of the table, and this was something that several players picked up on: "Let down by a ridiculously large case", and "very nice, but a bit too big" were a few of the comments it garnered. Nobody took issue with its performance though: "Smooth as you like, and stable on *Call of Duty 2*". So, the user experience is pretty decent, then.

SCREEN PLAY

While the choice of Logitech keyboard and mouse were universally popular ("Keyboard and mouse excellent!"), the display was considered pretty average: "Just responsive enough for gaming" wrote one of our panel, while another said: "Not the sharpest of monitors, had fairly dull performance". Mostly hits then, with just a few misses.

You says... "Nice, but a bit too big"
★★★★☆

PC Nextday

3800+ X2/2 x 7900GT

gold
PCFormat

Price £1,500 **Manufacturer** PC Nextday **Web** www.pcnextday.co.uk

WE SAY...

From the outside, this rig didn't look like much. The chassis is, well, a bit cheap, to be frank – heavy on the plastic, and it looks it, too, especially with that light and plasticky door on the front. But pry off the side, and there are some simply marvellous innards to drool over. This was the only rig on test to feature a pair of 7900GTs in SLI, which it combined with an Athlon 64 3800+ X2, and two gigabytes of Corsair TwinX DDR400. Somehow, PC Nextday also managed to shoehorn a Raptor 74GB 10K RPM hard drive, as well as a standard 7,200rpm 320GB model, into the budget. Hats off chaps, that sort of thing makes all the difference.

PC NEXTGEN

The result: the best *Quake IV* score on test of 105.2FPS, superb overall system marks in *PCMark*, and a peer-transcending *3DMark* score of 7,146. In performance terms, this one's the daddy. And hey, a new chassis is about the cheapest part of a PC...

YOU SAY...

Like the glossy screens appearing on increasing numbers of notebooks, the Xerox monitor supplied with the PC Nextday rig really polarised opinion: "The screen looks almost as good as a Sony VAIO XBlack" wrote one of our panel, while on the other side of the fence, we had "The screen is an issue in a bright room".

GLARE MARE

Glossy screens work best in the dark, it's true. However, nobody quibbled with the machine's performance: "Played well, no problems and no lag", and "Great performance, good processor, very good cards, eats games for breakfast". The rather large chassis invoked mixed reactions, but nobody baulked at the accessories, and the crowning comment seems to have been "a good package for the money". And we're inclined to agree – this package offers incredible value for money, given its immense performance. Who says top-of-the-range is out of reach?

90% **PCF says...** "Outclasses the competition with blistering performance."

You say... "Eats games for breakfast."
★★★★☆

Yoyotech

top gear PCFormat

3800+ X2 / X1900XTX

Price £1,500 **Manufacturer** Yoyotech **Web** www.yoyotech.co.uk

WE SAY...

Up there with the Cyberpower rig in sheer attractiveness, this system from Yoyotech featured some truly unique elements. The inclusion of a hot-off-the-production-line Asus widescreen monitor (with built-in TV card and webcam, no less) certainly drew the crowds – as did the new Asus Vento case, which made the rig look like an advancement of the Alienware design. However, the case's front-panel cover is pretty dreadful, and is explosively spring-loaded – so much so that one becomes concerned the hinge system will actually break itself. Inside though, it's smiles all the way: an X1900XTX – always a pleasure – with an Athlon 3800+ X2 and 10248MB of Corsair RAM.

SWIFT CLIP

These garner a good-enough Quake IV score of 77.6FPS and an excellent 3DMark score of 5,712. Not the absolute best performance on the planet, but a very playable result from a really rather plush games rig.

YOU SAY...

"Very good rig to play on" was the comment that reflects most of what our panel had to say about the Yoyotech rig's performance. Which is a good thing, as the sentiment didn't stretch to the chassis the PC was housed in: "Good performance, which makes up for the crappy case design" wrote another.

CASE IN POINT

Quite a shame, as that Asus Vento case really looks the futuristic business. However, it's really let down by it's brittle, spring-loaded, plastic front-panel cover. On the other hand, accessories-wise, everyone was happy The monitor was good, the mouse was good", and "the best monitor on show by far". True enough, the monitor really added to the rig's presence on the day. And while one of our poor readers had to deal with lag issues when the server fell over while using the Yoyotech rig, the rest were content with its performance: "No slow-down. Performed well".

85% **PCF says...** "Certainly fast enough, and a very attractive package"

You says... "A good rig to play on"
★★★★½

Watford
4400+ X2/X1900XT

Price £1,500 **Manufacturer** Watford Electronics **Web** watfordelectronics.co.uk

WE SAY…

The steely colossus of the Praetorian chassis dominated the Watford desktop, and to be sure, it's a case that screams solidity, with its metal door sheathing, wrought iron grille (well, maybe some lighter alloy) of the front panel. Under the hood, there's all kind of good: an X1900XT will put a smile on anyone's face, as will the 4400+ dual-core Athlon. Interestingly, this was the only machine with a dual hard drive striped RAID array, which explains why the Watford's *PCMark* hard drive benchmark nearly doubles that of the other rigs.

HARD DRIVING

Nope, you won't be waiting around for levels to load with this baby. Slightly soggy *3DMark* and *Quake* benchmarks compared to some other systems on test though – 4,965 and 77FPS respectively. Maybe it would benefit from another gigabyte of RAM in there… the X1900XT should certainly be knocking out a bit more in the *3DMark* stakes.

YOU SAY…

Cost-cutting for the Watford rig came in the accessories department: "Useless mouse and bog-standard keyboard" gets across what most people thought about the admittedly basic Microsoft input devices. Seems a bit rough, but given the amount of Logitech goodness on show here, it's kind of understandable.

ALL THE RIGHT NOISES

People were more impressed with the 7.1 Creative speakers however: "Speakers produce a nice clear sound – puts my 5.1 set at home to shame!" Said one of our panel. The Sony monitor was universally appreciated: "Neat design, fine for gaming response-wise" and "the screen's very nice" were two comments, though it did lack a DVI port. Most thought that the chassis was good, if a bit on the large side, and few took issue with the performance. "Very nice, smooth graphics, low noise", and "No problems with *Call of Duty 2* or *Quake IV*" sum up the general sentiment among our testers.

82% **PCF says…** "Solid rig with reasonable grunt and attention to detail."

You say… "Overall, a nice package." ★★★★☆

Scan
3800+ X2 / 7900GTX

Price £1,500 **Manufacturer** Scan **Web** www.scan.co.uk

WE SAY…

And so we come to Scan's Isotope chassis. Like our panel, the *PCF* staff were in two camps regarding this unusual small form-factor rig.

RETINA SCAN

It's ideal for LAN parties, but what would the missus say if you plonked one of these in the living room? Either way, it's packed with good stuff; an overclocked XFX 7900GTX, 2GB of Corsair RAM, an ultra-quiet PSU, and all the multi-threaderd jolly-juice of a dual-core Athlon CPU. We were also pleased with the backlit Saitek Eclipse keyboard, Logitech G5 laser mouse, and the workmanlike but effective Viewsonic 17-incher. Nice to see another 7.1 sound system too, and this Creative T7900 set was a popular choice among the manufacturers in the test. Performance was definitely ahead of the curve in the benchmarks too, with close on 100 frames-per-second in *Quake IV*, and racked up 5,175 in *3DMark 06*. Good effort all round.

YOU SAY…

The most controversial rig on test, Scan's Isotope chassis really divided views: "Weird looking case. Unique design. I like it in a way, a neat and compact desktop" wrote one of our gamers. Contrast this with "Ugly as sin, nothing short of an eyesore. One for the kiddies". Love it or loathe it, the Isotope chassis is a real talking point. Nobody took issue with the machine's performance however: "Great performance from a good machine, smooth frames, great games" wrote one of our panel. And we're not surprised – the inclusion of a 7900GTX means great things. It's pretty much the equal of the X1900XTX at a resolution of 1,280x1,024.

TOP MARKS

One reader simply wrote "Really really good. 10/10!". The 17" Viewsonic monitor, Saitek Eclipse keyboard and Logitech G5 mouse were all universally popular too, which just goes to show, if you pick the right parts, you get the vote. 'Nuff said!

86% **PCF says…** "It's a case of performance implied, performance supplied"

You say… "Very good performance." ★★★★☆

Komplett
3800+ X2/X1900XT

Price £1,500 **Manufacturer** Komplett **Web** www.komplett.co.uk

WE SAY...

The second PC on test to be housed in the mighty underbite of the Gigabyte Aurora chassis, this unit promised, at least visually, to be a real pixel-pounder. Strangely, it wasn't. While it achieved a respectable 5,130 3D Marks, its *Quake IV* performance really wasn't all that – an uninspiring 65.4FPS. We put this down to the presence of a single X1900XT CrossFire Edition card. Which in itself is a curious choice, as there was no extra card to go with it.

CROSS-EYED
CFE cards are a bit dearer than standard X1900XT cards at the moment, so there's a bit of the budget tossed away right there. And while the excellent Logitech desktop and bass-a-licious Creative T6060 speakers will please, the Samsung Syncmaster really isn't cut out for high-end games performance. A mixed result, then, from a system that, for some reason, didn't eke the best out of its good components.

YOU SAY...

The main bugbear of the Komplett rig was, for most people, the Samsung Syncmaster monitor. These three comments say it all: "Monitor struggled with the refresh rate, the only downside of this system", "let down by bad refresh rate during gameplay" and "Screen not up to the task". Not a good choice, then.

EYE CANDY
Elsewhere, people were generally happy with the rig's overall performance – and rightly so, given the spec: "Very nice graphics, very smooth and steady" and "performed well", which just goes to show that 64.5FPS is entirely adequate in a modern first-person shooter. People were happy as Larry with the keyboard, mouse and speakers, with the bass response getting a few noteworthy mentions: "Good sound" and "bass quite overwhelming!". A seemingly good-spec PC all round, but a bit let down a bt by the monitor's ghosting.

69% **PCF says...** "For £1500, you'd expect a more finely tuned system"

You says... "Jerky screen update"
★ ★ ★ ☆ ☆

Wired2Fire
4000+ X2/2x7800GT

Price £1,500 **Manufacturer** Wired2Fire **Web** www.wired2fire.co.uk

WE SAY...

Very respectable benchmarks from the off puts the Wired2Fire rig near the top of the tree in performance terms – a hefty 5,703 3DMarks and 83.3FPS In *Quake IV*. The Cooler Master Centurion case is pretty clean and spare – no windows or twinkly bits, so this isn't a PC for the bling-hunter.

7-SERIES SAUCE
Like others in the test, Wired2Fire opted for a pair of 7800GTs in SLI, which is a good little setup, and will make most games sing at standard resolutions – this rig certainly makes good use of them. This was also one of the only rigs to come with a 20-inch widescreen TFT, and a pretty crisp one at that. No speakers however; only a Logitech headset, which makes for a fairly faff-free, cordless setup. A decent little powerhouse, although the underwhelming *PCMark* benchmarks show that it's area of speciality is definitely games. That'll be the 7800GTs coming into play; their performance is shader-intensive apps lacks a bit.

YOU SAY...

People were generally surprised by this rig, as it came with no speakers at all, just a gaming headset. They were liked by some: "Different headphones – nice" wrote one of our panel, while another said "headphones a bit annoying". Looks-wise, people though the setup a little understated: "Case looks a bit bland – not too interesting", and "Could they have dropped something for better looks?" were two telling comments. However, the choices of monitor, keyboard and mouse were all appreciated: "Good monitor – nice to have a widescreen" and "Widescreen monitor nice and clear. Design good". Definitely some brownie points there.

SMOOTH OPERATOR
Performance-wise, everyone was pretty happy: "Gameplay quite smooth", and "Worked well – no lag or freezing". A no-frills, games-orientated system, then, which is actually what a lot of people would prefer, believe it or not...

79% **PCF says...** "An upgrade to 7900 is definitely in order, it seems."

You says... "Smooth gameplay."
★ ★ ★ ★ ☆

top gear PCFormat

Cyberpower
4800+ X2 / 2 x 7800GT

Price £1,500 **Manufacturer** Cyberpower **Web** www.cyberpowerinc.com

WE SAY…

Oooh, purdy. We've seen systems from Cyberpower before, and its trademark use of an LED-festooned NZXT Lexa chassis may not be a new move, but it hasn't lost its appeal – this is a system that implies puissance through looks. And yes, it's powerful to boot. 105.4FPS in *Quake IV*? We'll have some of that. The best on test, no less, and while 7800GTs may be last-gen tech, a pair in SLI really work with that 4800+ dual-core Athlon to make for creamy framerates and a decent *PCMark* score. We can't help but feel that there's a bit of tuning at the factory level too; similar-spec PCs to this just don't seem to perform as well.

THE REAL DEAL
Granted, 4,077 3DMarks is nothing to get excited about, but then you have to judge on real-world performance too. Which this rig has in spades… along with bags and bags of sex-appeal. It's no wonder it went down a storm with our panel of players.

90% **PCF says…** "A beautiful balance of performance and looks."

YOU SAY…

Very much the most visually appealing rig on test, the Cyberpower system really impressed with its windowed Lexa chassis showing off the quality innards: "The case is beautiful"… "Bright lights, good looks"… "This case rocks". The Corsair LED RAM no doubt helped there, too.

BEAUTY IS THE BEAST
The power of the machine matched the looks too, and got everyone's vote. One of our panel wrote "Very good – no lag, refresh rate up to the job, clear as crystal", while another enthused "System runs super". Everyone thought the speakers and monitor were up to the task too, though the system lacked a decent keyboard and mouse – the Logitech wireless set it should've shipped with never turned up, and people were forced to use the standard wired keyboard and mouse we provided as a backup. However, this aside, it was the most popular rig on test, garnering both high scores and high praise from all.

You say… "Beautiful, and runs well."
★★★★★

gold PCFormat

Gladiator
Opteron 146/7800GTX

Price £1,500 **Manufacturer** Gladiator **Web** www.gladiatorcomputers.co.uk

top gear PCFormat

WE SAY…

An Opteron CPU? In a games rig? Are they stark, staring mad? Clearly not, as the Gladiator machine tore its way through the *Quake IV* benchmark at a blistering 90FPS. The slightly disappointing *3DMark06* score of 3,556 – the lowest on test, in fact – can be partly attributed to the 7800GTX. While it's a good, fast card, it's not as tasty as two 7900s; as we've found, it's able to run *Oblivion* at 1,280x1,024 happily, but struggles with distance work in games that are heavy on the high dynamic-range lighting.

SOUND AS A POUND
Still, that real-world performance figure is a stormer, and it's nice to see an Audigy sound card in there too. Plus, that iTrigue 2.1 setup is just fine for gaming. We have a real soft spot for that glossy Asus monitor too – it really looks the business, very bright and crisp. Despite the unimpressive *3DMark* score, it's a nice rig, offering solid performance in both *Quake IV* and *Call of Duty 2*.

YOU SAY…

The Gladiator rig differentiated itself in a rather unique way, as it housed an Opteron CPU. People really picked up on this, and were impressed by the rig's smooth, reliable performance: "Very good gaming machine, amazing performance for an Opteron processor" wrote one, and "good performance, no lag". Perhaps that's what you get when you build server-grade reliability into a games PC…

VISION EXPRESS
The glossy monitor went down a storm, too: "Picture looks superb, with nice contrast" said one reader, a comment that echoes many others. Like a lot of other rigs, Gladiator wisely packed a Logitech G15 keyboard into the bundle, so no problems there, and the Creative Audigy soundcard turned a few heads, chiefly as it was a rarity in this company. Overall, it was a well-received rig: "Almost won a game on this one! Gaming performance is excellent, no lag at all".

77% **PCF says…** "A tasty rig, but not as future-proof as others on test."

You say… "Very nice performance."
★★★★⯪

SPECIFICATIONS AND PERFORMANCE
From mini to mighty, here's how they measure up

	£1,500 **MESH**	**£1,500** **Aria**	**£1,500** **PC Nextday**	**£1,500** **Yoyotech**	**£1,500** **Scan**
You say	★★★★☆	★★★★☆	★★★★☆	★★★★⯪	★★★★⯪
PCF says	83% *top gear PCFormat*	72%	90% *gold PCFormat*	85% *top gear PCFormat*	86%
MANUFACTURER	MESH	Aria	PC Nextday	Yoyotech	Scan
WEBSITE	www.meshcomputers.com	www.aria.co.uk	www.pcnextday.co.uk	www.yoyotech.co.uk	www.scan.co.uk
CPU	Athlon 64 4400+ X2	Athlon 64 3700+	Athlon 64 3800+ X2	Athlon 3800+ X2	Athlon 64 3800+ X2
RAM	2GB DDR400	2GB DDR400	2GB Micron DDR400	1GB Corsair TwinX DDR400	2GB Corsair Value Select DDR400
GRAPHICS CARD	Radeon X1900XTX	2 x NVIDIA 7800GT (SLI)	2 x 7900GT (SLI)	Asus EAX1900XTX	XFX 7900XXX (OC'd)
HARD DRIVE	300GB SATA 7,200RPM	300GB SATA 7,200RPM	74GB Raptor 10K RPM + 320GB Caviar 7,200RPM	Hitachi 250GB SATA2	Samsung Spinpoint 250GB SATA
OPTICAL DRIVE	Sony DVD RW + Sony DVD-ROM	Pioneer 110 Dual Layer DVD-RW	Phillips Dual Layer DVD-RW + Phillips DVD-R	NEC 4570 Dual Layer DVD-RW	Pioneer 110 Dual Layer DVD-RW
CHASSIS	MESH chassis	Silverstone TJ05 black + window	Zoostorm Tower ATX	Asus Vento 7700	Scan 3XS Isotope
PSU	550W	Hiper Type-R modular, 580W	Zoostorm 500W	Zalman Ultra-Quiet 460W	Akasa Ultra Quiet 460W
MONITOR	19" Viewsonic VX924	19" AG Neovo TFT	19" Xerox XA7-19i	Asus 20.1" Widescreen	17" Viewsonic VX724
KEYBOARD	Logitech G15	Logitech G15	Logitech G15	Logitech G15	Saitek Eclipse Illuminated
MOUSE	Logitech G7 cordless	Logitech G7 cordless	Microsoft Laser 600	Raptor Gaming M2	Logitech G5 Laser
AUDIO	Creative T7900 7.1	Arianet 5.1	Phillips MMS460 5.1	Logitech X530 5.1	Creative T7900 7.1
3DMARK06 SCORE	5,325	5,139	7,146	5,164	5,175
QUAKE IV SCORE	80FPS	75.5FPS	105.2FPS	77.6FPS	98.8FPS
PCMARK OVERALL SCORE	5,296	3,826	5,712	5,153	5,315
PCMARK HDD	5.668MB/s	8.671MB/s	8.809MB/s	6.013MB/s	5.793MB/s
PCMARK VIDEO ENCODING	325KB/s	157.574MB/s	328.113KB/s	280.113MB/s	302.413 KB/s
PCMARK IMAGE DECOMPRESS	25.091 million pixels/s	11.481 million pixels/s	20.362 million pixels/s	22.649 million pixels/s	22.937 million pixels/s
PCMARK FILE ENCRYPTION	39.090MB/s	11.311MB/s	20.362MB/s	14.594MB/s	20.343MB/s
PCMARK HDD VIRUS SCAN	61.271MB/s	14.577MB/s	40.579MB/s	35.970MB/s	34.754MB/s
PCMARK MEMORY LATENCY	10.515 million access/s	10.515 million accesses/s	9.615 million accesses/s	9.615 million accesses/s	11.589 million accesses/s

PCF Verdict

Collective thinking

For a test like as this, we'd normally commission a single experienced writer to benchmark each machine, then give us his objective and subjective verdict on each. This time around, each PC had eleven different brains examining it – 10 independent players and one reviewer. Why didn't we stick with a single, definitive viewpoint? Because to hit the £1,500 price limit we set the manufacturers, some

compromises had to be made – and there were so many different approaches that a single viewpoint just wouldn't do. Plus, playing *Quake* against you lot was fun.

There are some headline points of interest – those machines that went for great looks were more populer with the younger members of our jury than the old, while everyone picked up on the fact a bad monitor can ruin a system (are you

listening Komplett?). It's intriguing no-one chose to submit a CRT as a low cost, high-framerate answer to the challenge – their days are clearly more numbered than we thought.

The test also highlighted the fact that there seems to be a baseline level of games performance at which most are happy. Not one of these machines was really slated by reviewer or

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£1,500 **Watford**	£1,500 **Wired2Fire**	£1,500 **Komplett**	£1,500 **Gladiator**	£1,500 **Cyberpower**
★★★★☆ **82**% top gear PCFormat	★★★★☆ **79**%	★★★✬☆ **69**	★★★★✬ **77**	★★★★★ **90**% gold PCFormat

Watford	Wired2Fire	Komplett	Gladiator	Cyberpower	**MANUFACTURER**
www.watfordelectronics.co.uk	www.wired2fire.co.uk	www.komplett.co.uk	www.gladiatorcomputers.co.uk	www.cyberpowerpc.com	**WEBSITE**
Athlon 64 4400+ X2	Athlon 64 4000+	Athlon 64 3800+ X2	AMD Opteron 146 2.0GHz	Athlon 64 4800+ X2	**CPU**
1GB Elixir DDR400	1GB Corsair DDR400	2GB Corsair TwinX DDR400 (Dual Channel)	2GB Mushkin DDR400 (Dual Channel)	1GB Corsair Performance Dual-Channel	**RAM**
X1900XT	2 x Nvidia 7800GT (SLI)	Club3D Radeon X1900 CFE	NVIDIA 7800GTX	2 x 7800GT	**GRAPHICS CARD**
2 x Maxtor DiamondMax 10 200GB in striped RAID	250GB SATA	Maxtor DiamondMax 10 250GB	Western Digital 250GB SATA2	300GB SATA2	**HARD DRIVE**
Sony 16X Dual Layer DVD-RW + Sony DVD-ROM	NEC Dual Layer DVD-RW	NEC Dual Layer DVD-RW	LG Dual Channel DVD-RW	Sony Dual Layer DVD-RW + Sony DVD-R	**OPTICAL DRIVE**
Coolermaster Praetorian 732	Cooler Master Centurion	Gigabyte 3D Aurora	Gigabyte 3D Aurora	NZXT Lexa	**CHASSIS**
Tagan 580W	525W PSU	Tagan Easycon 430W	Tagan Easycon 430W	525W PSU	**PSU**
Sony 19" TFT	20" Belinea TFT	19" Samsung 930BF TC0-99	17" 3ms Asus PM17TU	19"	**MONITOR**
Microsoft Comfort	Logitech Internet Pro	Logitech Media Elite	Logitech G15	Logitech Wireless	**KEYBOARD**
Microsoft Laser mouse	Logitech MX518	Logitech MX518	Logitech MX510	Logitech Wireless Mouse	**MOUSE**
Creative T7900 7.1	Logitech Precision headset	Creative Inspire T6060 5.1	Creative i-Trigue 3600 2.1	Creative X530 5.1	**AUDIO**
4,965	5,703	5,130	3,556	4,077	**3DMARK06 SCORE**
77.6FPS	83.8 FPS	64.5FPS	90.4FPS	105.4FPS	**QUAKE IV SCORE**
5,190	4,263	4,859	4,771	5,772	**PCMARK OVERALL SCORE**
9.388MB/s	6.457MB/s	5.875MB/s	6.810MB/s	5.894MB/s	**PCMARK HDD**
209.056KB/s	170.482KB/s	261.057KB/s	194.810KB/s	353.426KB/s	**PCMARK VIDEO ENCODING**
14.662 million pixels/s	12.927 million pixels/s	21.79 million pixels/s	15.077 million pixels/s	27.495 million pixels/s	**PCMARK IMAGE DECOMPRESS**
17.801MB/s	12.444MB/s	16.579MB/s	14.352MB/s	23.056MB/s	**PCMARK FILE ENCRYPTION**
48.516MB/s	15.930MB/s	39.701MB/s	19.731MB/s	38.975MB/s	**PCMARK HDD VIRUS SCAN**
10.737 million accesses/s	12.017 million accesses/s	8.054 million accesses/s	12.017 million accesses/s	12.178 million accesses/s	**PCMARK MEMORY LATENCY**

panel. One thing that did stand out, though, was that for budget busting games performance, two mid-range graphics cards are definitely better than one super spanky high-end one. Of course, the upgrade path for a machine with a single card is clearer, since you can add another at a later date (providing the motherboard supports it). But only you know where you're prepared to compromise on that one.

There are no real losers here, though – proving £1,500 can still buy a lot of games machine. However, top marks simply have to go to PC Nextday and Cyberpower; the former for sheer bang-for-buck, and the latter for a machine that looks great and performs better. **PCF**

The Gladiator rig won plenty of plaudits from our panel, thanks to its looks and performance.

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Arena

REDISCOVER Before *Oblivion,* there was *Arena.* And *Daggerfall,* and *Redguard,* and *Battlespire,* and *Morrowind...*

Ooh, is that really *Ultima Underworld*? On firing up the first *Elder Scrolls* game in *DOSBox*, every passer-by had its number straight away. And certainly, the 12-year-old prequel to *Oblivion* (which netted 93% last issue) wears its key influence on its sleeve, but what's really remarkable is just how much it and its pixel-shaded modern offspring have in common. And not just in the inevitable slaying of inexplicably aggressive rats; all the *Elder Scrolls* lore, including locations, races, monsters,

back story – is intact, even in this clunky, ray traced first-person RPG. That said, *PCF* was distressed to discover that it couldn't make its cat-person Kahjit look even remotely feline. Even the direction-responsive melee combat was there right from the start, albeit almost unbearably sluggish. Though there's in theory just as much unfettered adventuring, it doesn't feel anywhere near as freeform as *Oblivion*, largely because of a far greater emphasis on pure combat and a more restrictive, traditional

levelling system that doesn't evolve your character based on your playing style.

Still, it's far more than a curio, and worth revisiting to see how far the *Elder Scrolls* games have come. You can check it out for yourself at **www.elderscrolls. com/downloads/ downloads_games.htm**.


Goblins: damned to perish no matter what decade you're in.

Character creation had a long way to go back then...

FALSE PROPHETS
"AS FAR AS WE CAN TELL, IT'S HARD ENOUGH TO FILL A CD WITH DATA, SO WHAT IN THE NAME OF LUCIFER WOULD YOU DO WITH A DVD-RAM DRIVE?" IN AN INNOCENT AGE BEFORE 1.4GB XVID DVD RIPS (CHRISTMAS 2000, SPECIFICALLY) PCF STROLLS BLINDLY OFF THE CLIFF OF THE FUTURE.

Zombie fever

PCFormat does so love its zombies (the office catchphrase is currently 'merr... brains', but we also replace 'brains' with a relevent term, viz: "Merr... *Quake*/coffee/deadlines/Transformers", and so on). It's also worth noting that Tech Ed Al's *Quake IV* model is a foul, partially flayed zombie. So, it's not surprising that we liked *Zombie Panic*, a *Half-Life* multiplayer mod. It's a last-man-standing affair, where one player takes the zom mantle, and must hunt down the other human players. Every human killed promptly respawns as a zombie, and zombies will get up from a seemingly fatal wound, so the name of the game is simply stay alive as long as you can, then spread undeath once you're infected. It's on the disc and at **www.zombiepanic.org**
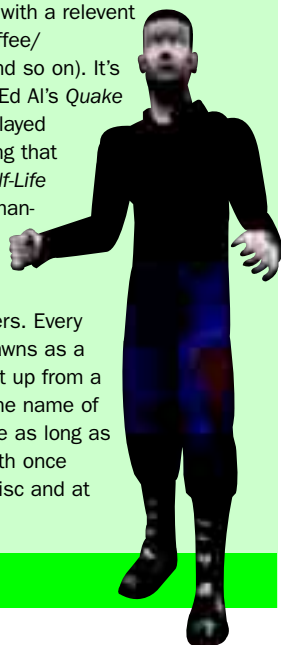
Get more info at
www.zombiepanic.org

Loaded cartridges

REINVENT Dusty NES games given new purpose as hard drives

Emulators have made the blokeish desire to collect old consoles and their games obsolete: discuss. The ranks and listings for NES games on eBay suggest otherwise, but there are surely some folk happier to gun up *Metroid* on their PC or hacked PSP than on the original console, leaving a slew of unnecessary cartridges lying about. One such modernist found himself in a similar predicament, and thus devised a cunning way to restore purpose to the old carts whilst retaining their retro charm. So, he cracked open *The Legend of Zelda* and slipped a laptop hard drive inside it, stuck an IDE to USB converter a board neatly inside the socket at the bottom of the cartridge, and ta-da: a Nintendo-emblazoned conversation piece of an external drive. Of course, some will weep at the damage wrought upon the resale value of the cartridge, but that's not the point, really. Witness the original project and a guide on how to do it yourself online at **www.de-frag.us/zelda_drive**
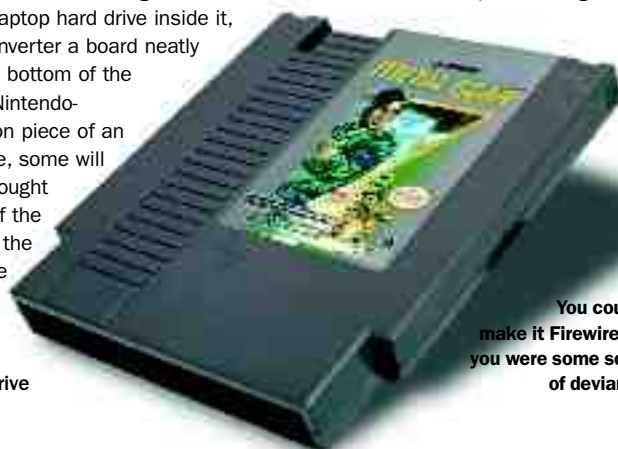
You could make it Firewire, if you were some sort of deviant.
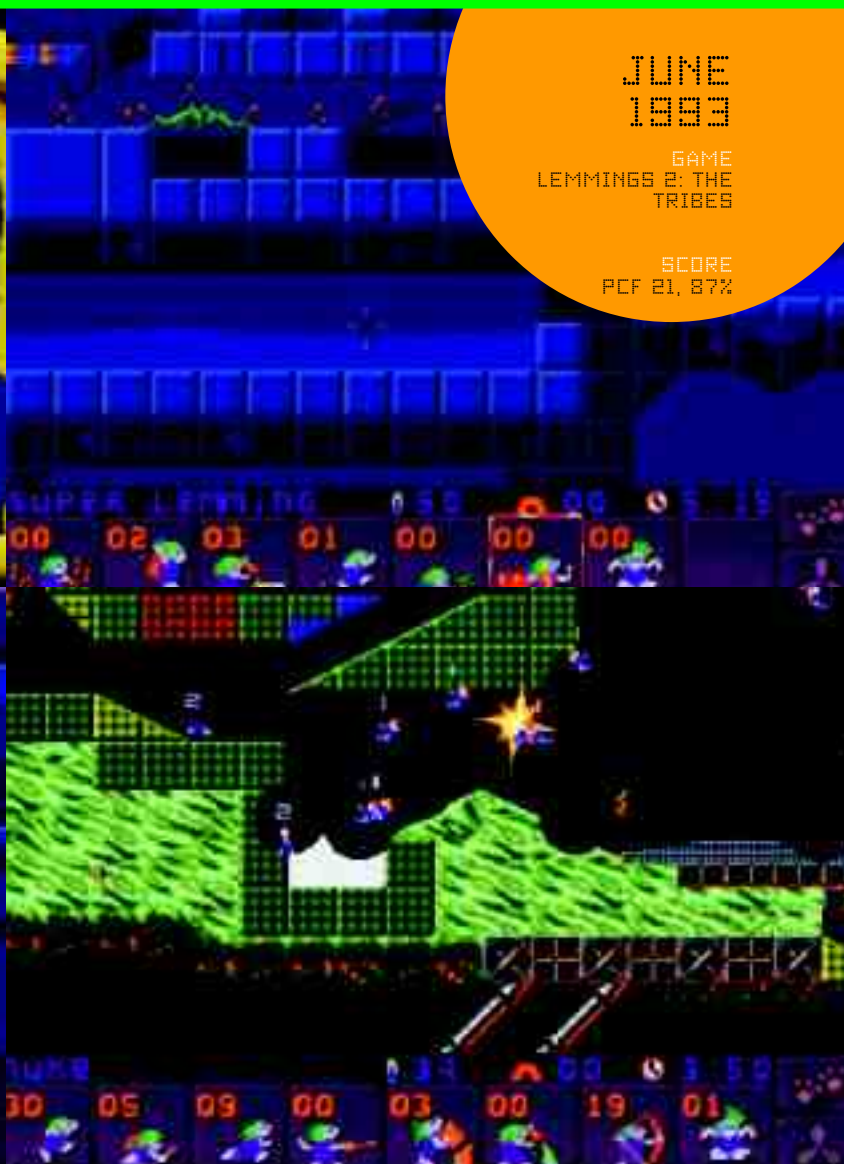
JUNE 1993

GAME
LEMMINGS 2: THE TRIBES

SCORE
PCF 21, 87%

REMEMBER...

From the (eventual) makers of GTA, the sequel to the game your dad didn't mind you playing

We're often fascinated by any chance to revisit titles made before games became set in their ways. The timeless, genre-defining joys of *Doom* were still a year away when *PCFormat* reviewed *Lemmings 2*, so no-one really knew what kind of a games platform the PC was on its way to becoming.

A sequel to the generation gap-straddling puzzle game *Lemmings* was the biggest of big deals 13 years ago, back when gaming was so innocent that playground chat revolved around what new abilities the oh-so-cute characters were rumoured to posess ("I heard there's a Superlem." "SUPERLEM? WOW!") and which tribe was your favourite, rather than today's goss about whether or not you can beat a man to death with his own foot in *Wrestlegasm 48*. Pick *Lemmings 2* up from the bargain basements, and you'll find it remains unfeasibly, peripheral-endangeringly hard. Though this doesn't mean it's a pain in the rear to play after all these years, we feel we should also warn you that its 'humour' really hasn't dated very well at all...

ALSO OUT THEN...
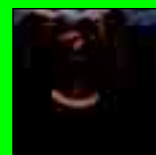
EVE OF THE BEHOLDER 3
Once again we cast our minds back to the pre-*Doom* age, and at the time everyone thought that *Ultima Underworld* and its sequel represented the path PC gaming was sure to tread. Hence, a clinical RPG like this could only suffer against such competition.

SCORE
PCF 69%

THE LEGACY
PCFormat's Deputy Editor Alec has a dark secret – he once sold his prized copy of this genuinely creepy Lovecraftian survival horror RPG for a crisp fiver at a carboot sale in the early Nineties, despite knowing full well one of its floppy discs was buggered. The man is clearly a scruple-free bounder.

SCORE
PCF 83%

NIGEL MANSELL'S WORLD CHAMPION-SHIP
Time for a glimpse into the unfailingly cerebral discussions that pass over the *PCFormat* desks: "Mike, don't suppose you ever played *Nigel Mansell's World Championship?*" "I did. It was alright."

SCORE
PCF 68%

LookingBack

THE CREATOR'S CRITIQUE

The move to fully rendered 3D in *Broken Sworld 3* gave Revolution plenty to think about.

Broken Sword 3's facial animations were impressive, but its sequel's are shaping up to be even better.

Broken Sword
The Sleeping Dragon

Kieron Gillen on how Revolution shaped the future of adventure gaming on the PC

The adventure is dea... OK, let's try starting this feature again. The number of articles which start off by loudly exclaiming the demise of the most point-and-clickery of genres has gone far past saturation point. Especially because, increasingly, it's just not true any more. *Broken Sword: The Sleeping Dragon* was a major stepping stone towards the interesting adventure mini-revival of this last 12 months (look back at the broken yet addictive *Fahrenheit*, and forward to *Dreamfall* and *Broken*

Sword 4). The brilliant yet far from perfect *Broken Sword 3,* as it'll be known for the rest of this feature, was a brave attempt to co-develop a big-budget game for both consoles and PCs, while the development team strove to master the vagaries of nascent technologies like direct controls and real 3D. That Revolution had given itself a mountain to climb is beyond question.

It was a long time coming. "*Broken Sword 2* was the last of the 2D point-and-click adventures," explains the ever-avuncular Charles Cecil. "After that, it was clear that it had to move to 3D. People were expecting 3D." Dev teams had done great 3D real-world games with the tech, but it wasn't good enough. "In an adventure you expect a better quality of graphics that were able to be delivered by a PC or – frankly – than a PS1," elaborates Charles, " One of the strange things was that when we talked to the guys at Virgin about producing the original *Broken Sword* on the PlayStation, they laughed at us. In fact, when we went to Sony, they laughed at us, because it was assumed that only 3D would work… and, in fact, the game was very successful on PlayStation and was never released on budget. In fact, it's one of the few games where it costs more now to buy a second-hand copy than one new. Which is extraordinary. PlayStation owners get really cross that they

can't buy it. I don't blame them, frankly… but we can thank publishers for that."

AN EXTRA DIMENSION
So they played the waiting game. "We deliberately held off for a number of years, as we wanted to wait for a point at which the graphics would look good enough to be acceptable," explains Charles, "We skipped a generation, skipped a couple of years until the PC had caught up." At which point, they *had* to do a 3D world and there were new problems to face. "The move to 3D was really quite profound," reminisces Cecil, "it required a change to the direct controller and the change to 3D. The great thing about the change to 3D really was that you could be a lot more cinematic. Obviously, in 2D you can have sprites at a certain angle – and a fair range – and they still look right. But beyond a certain point, you can't. By being able to move the camera around on certain planes it gave us huge opportunities, but we had to learn to be able to do that."

While not wanting to just be an arcade-adventure like *Tomb Raider*, there was a definite urge to have more than just the use X object on Y thing puzzle to go along with the direct-control of a character. "We also thought that it should have more of a repetitive gameplay element – which is where box-shifting came along," adds Cecil, mentioning one of the oft-cited criticisms of the game. "I think box-shifting was a legitimate tool within certain contexts, but we over-used it –

The game's cohesive visual style is distinctive.

The game offered plenty of action, and the level of interaction meant it never felt like you were on rails.

and also used it at inappropriate points."

Also important for the team was the need to maintain visual coherency between games, rather than the constantly shape-changing Guybrush Threepwood. Having just done the process again for Sumo Digital's artists – who are developing *BS4* with them – Cecil can see the line. "I drew up a style guide, and realised that a lot of what we did with *BS3*… well, to be honest, a lot of it came from *BS1* and *2*," Cecil adds, "I've always looked closely at the screens and worked with the artists. The important thing is to remember that artists are prepared to realise that they're so engrossed with their work they need someone to come and comment on it. We had very good artists – as we do here, with the Sumo guys. They respect that if you have a good eye, you can bring something new to it. I think we set the bar extremely high in terms of the detailed close-up animations and the facial expressions."

While pleased with the narrative, Cecil can't help but pick on its problems. "If you were to go back at the end of *Broken Sword 3* and asked someone to say exactly what happened… well, some people may find it hard to do," he sighs, "and that's a weakness. You need a flash of realisation at the end of what was going on. While *Broken Sword 4* may come across as more complex, at the end I think it'll be a lot clearer."

The denouement annoyed him in other ways. "In hindsight, I think the ending's too hard." Of course, he's always been questioning his endings. "One of the interesting things with

> ## "The story was very strong, and the puzzles were quite impressive"

Broken Sword was you finished the game when you threw some C4 onto a barrel of gunpowder. And that worked well, as you sat back and watched the explosions. It was very satisfying," he recalls, "*Broken Sword 2* ends when you arrive and you automatically put the third shield in. You don't do it as a character. That was a big thing I learnt from that – you've done all this stuff, and you want to be the one who does this final act. Have a cinematic animated sequence after that, but you have to be the one who triggers it. That's the climax of your gameplay, and if you don't have it, you'll start to feel cheated".

It's interesting to note that, compared to many of the people *PCFormat* interviews for this column, Cecil seems to be a little overcritical of his game. "I think the move to 3D worked very well, visually," he says, finding an aspect of the project to enthuse about, before qualifying the unalloyed joyous outburst "On the PS2, the load times were definitely too long, but it looked stunning. The technology worked. I think the story was strong and the puzzles were generally quite good. We are, generally speaking, very, very critical, and the elements we haven't talked about are very good. We got 87% in *PC Gamer* and 9 in *Edge*. And some people would say that's possibly too high a score, and maybe they're right and maybe they're not right… but it was very well reviewed." Cecil grins: "I've been concentrating on the critical, negative things but, when all's said and done, there really was an awful lot to be proud of." **PCF**

Missing manuscript
The story behind *Broken Sword*…

The actual background material of the Broken Sword games is based on esoteric history which adds context to the whole game. However, in the case of Sleeping Dragon, it wasn't quite right. "One of my biggest regrets with Broken Sword 3 was that while the Voynich Manuscript is an enormously exciting topic, we didn't tie it into the gameplay," explains Charles, "So it felt a little superfluous. Like a superficial add-on, which it shouldn't have done. I'm not quite sure why I didn't see it earlier. I saw it later in development, but you can't go back at that stage, because if you start tinkering with big chunks of gameplay and changing the story, then that has an enormous knock-on effect."

Simon V speaks up for the neglected half of the PC gaming experience

Sound isn't getting the attention it deserves – not from the hardware developers, game developers, or gamers – and I'll admit that I'm a little bitter about it. I'll also admit it's a problem that lies with us developers. The bottom line is, game audio is currently pretty unspectacular.

The audio aspect of games hasn't taken a real leap forward since companies started to spend more money on quality recordings for in-game audio back in the early 1990s. Since then, these recordings have been implemented in games in a disappointingly unsophisticated and predictable manner: you throw a grenade, it explodes, the game plays 'grenade.wav', and so on. The character, behaviour and overall implementation of sound should not only be more realistic, but also fill high profile functions and work as subtle hints in the gameplay itself.

In order to make sound a pivotal element of games, things need to change. In future, when a developer releases screenshots of its new game, we want to hear a one minute audio clip of it too! From now on, my attitude towards devs who don't do this will be 'obviously your graphics are worth displaying – the fact that you don't show off your sound can only mean it's crap.'

If gamers joined in and assume this attitude, and you might just force developers into reinventing game audio! Developers should realise the full potential of sound, and put some thought into how it is used. Marketing executives should let audio get the attention it deserves, too. Being both a developer and a gamer (not all developers are both, you know), I have more power than most – and I promise to use it! By writing this and designing sounds for *Ghost Recon: Advanced Warfighter*, I mean to take the first steps towards this glorious future. I bet there are many sound designers out there who are willing to join in – but public demand is the key. Game audio can be so much more – so unite, and demand to be shown just how far things can go.

Simon V is the Sound Designer at GRIN, developer of *Ghost Recon: Advanced Warfighter*.

Refresh

OLD GAMES, NEW LIFE

The Mod Squad
Extras for your favourite games

Kreedz Climbing

Game Half-Life 2

Web www.kzmod.com

Kreedz Climbing is a non-violent, multiplayer climbing mod based on the Source engine. That may not sound very exciting, but it's actually incredibly skilful and nail-biting with players racing to the map's highest point. Level designers mix or ignore themes as they see fit, and the result is a growing number of maps filled with players leaping from space stations, waterfalls, mountain tops and the game-based equivalents of surrealist paintings.

Pathways Redux

Game Doom 3

Web www.planethalflife.com/blended

Redux is a nifty tribute to a Mac favourite, *Pathways into Darkness*. Made by Brendon Chung, the mod features not only the standard, up close fighting to which we are all accustomed, but also a few interesting new features. The parachute jump at the start opens things well enough, but it's the chase sequences and conversations with dead bodies later in the game that give thrills and chills in a slice of short-lived bliss.

HONOURABLE MENTION

Intl. Online Soccer

Game Half-Life

Web ios.planethalflife.gamespy.com

We're harking back a while now in terms of games – *Half-Life* is now eight years old – but we figured that it was worth paying tribute to this unusual modification, what with the football on telly and all. IOS arrived a little late to the *Half-Life* scene but that didn't make much of a difference – it recently won awards on **www.moddb.com** and a Source sequel has been announced. Since we shouldn't need to explain the rules, we won't bother, just rest assured that *IOS* is suitable for armchair strikers everywhere.

MMOG Log

Power, corruption and lies infest the online worlds…

The world of MMORPGs has been secretive, mysterious or just plain scary this month. First off, players of *RF Online* are promised a 'mystery event' soon that will address issues of bullying among players. Things could also be getting interesting as Bioware open a branch in Austin, Texas amid news that it will focus on the team's first MMORPG, though specifics remain sparse on the ground at the moment.

Elsewhere, Ubisoft has shut down Wolfpack Studios and made *Shadowbane* free. Not everyone is happy though, *Roma Victor* announced the first crucifixion in 2000 years (check out the victim at **www.roma-victor.com**). So we figured we'd appease the gods by giving away 15 free accounts for the soon-to-be-released, Roman themed MMO. To be in with a chance of winning, answer the following question, state what size toga you wear and post it in to **mmoglog@futurenet.co.uk**. Normal T&Cs apply, see **www.pcformat.co.uk** for details.

What is the name of the Roman wall that divides England and Scotland?

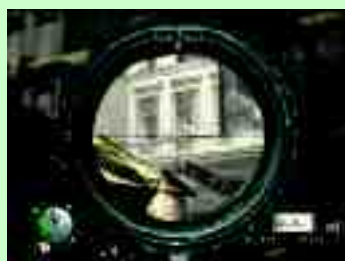**A** Hadrian's Wall
B Wise's Wall
C Martin's Wall

RE-RELEASES OF THE MONTH
There's life in some old dogs yet

Medieval Lords
GSP » £5
Relaxed gaming is at something of a premium; currently it's all about fast reflexes and rapid decision-making. Thankfully *Medieval Lords* sits in the Settlers school of chilled computing.

Sniper Elite
Focus Multimedia » £5
This release is a bargain for all the *Black Hawk Down* junkies that stuck resolutely to their rifle. *Sniper Elite* makes a refreshing change to the gung-ho shenanigans of most FPS games.

Dino Crisis 2
Xplosiv » £5
Resident Evil-style nostalgic nonsense to feast your PlayStation-tinged visual cortex on here. Nasty avian ancestors, the dinosaurs are the baddies that need to be turned into so much lizard mince.

Juiced
Focus Multimedia » £10
Not content with thrashing boring sports cars around tedious tarmac tracks? *Juiced* could be for you. Racing hard takes a back seat to concocting hideous paint jobs and earning respect.

Over to you... HAVE YOUR SAY

Boffin Nation

PCFormat readers should be able to build a PC in 10 minutes flat, with an angry gerbil attached to each finger. But how PC savvy are you really?

Yer average PCF reader is a cocky sod – almost **14%** of you describe yourselves as a 'knowledgeable enthusiast'. To the **12** people who labelled themselves mere novices, we say keep reading the mag...

92% of you know what ASCII stands for (American Standard Code for Information Exchange), and only **13%** of those who got it right admitted to having Googled it.

Microsoft et al may be determined that the megabucks come from pre-built systems, but we're heartened to discover **8/10** of you have built a rig from scratch.

30% of the PCF readership have jobs in the IT industry.*

A significant minority have also installed Linux at some point, though **3/5** of you have yet to make friends with the penguin.

38% of our readers have had a Linux versus Windows argument. We'd love to **introduce** "Pretentious Linux geeks tend to be nauseating, smash-the-state adolescents" **to** "Any single aspect of Windows you care to mention has a serious flaw, yet people seem to accept that..."

Though batch files were the bread and butter of the DOS era, **43%** of readers have never made one. Youth of today, don't know they're born, etc.

Despite the rise and rise of the GUI, **80%** of PCF readers have edited their registry.

7/10 newsletter subscribers have changed XP's Luna theme for something more aestheically pleasing.

Preferred Windows customisations range from "removal of redundant services, close as many of the holes as possible, add ipx protocol for secure file sharing" **to** "I have a Star Trek-based desktop theme."

Programming (other than HTML) is clearly not a lost art – **2 in every 5** respondents know at least one language.
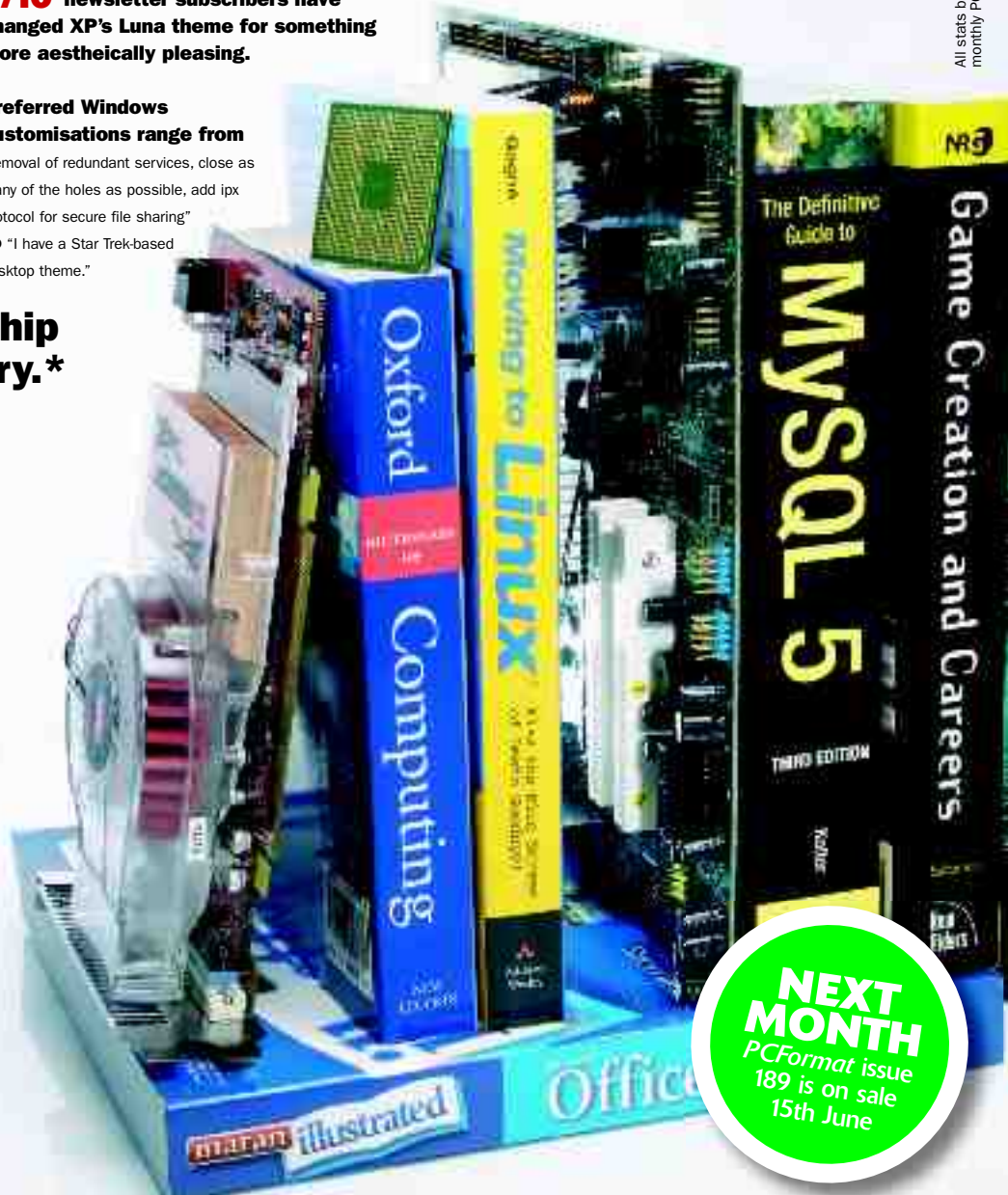
HTML is practiced by **57%** of you. "I once wrote a nasty trojan that took down my whole college. Bit harsh, but I was impressed it actually worked!"

*And therefore earn more than the entirety of the PCF staff combined. Probably.

NEXT MONTH *PCFormat* issue 189 is on sale 15th June